Integrated Resource Inventory

Alberta
ENERGY AND
NATURAL RESOURCES
Resource Evaluation
and Planning

INTEGRATED RESOURCE INVENTORY
OF DEEP BASIN STUDY AREA (NTS 83L)
VOLUME I

AN INTEGRATED RESOURCE INVENTORY
OF
DEEP BASIN AREA (NTS 83L)

PHYSICAL LAND CLASSIFICATION
FORAGE INVENTORY AND
ECOLOGICAL LAND CLASSIFICATION

VOLUME I

Prepared by:

Resource Inventory and Appraisal
Resource Evaluation and Planning
Alberta Energy and Natural Resources

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Submitted by:

J.H. Archibald
N.B. Ferguson
R.W. Haag
W.K. Hay
D.J. O'Leary

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ABSTRACT

The Deep Basin (NTS 83L) study area is located in west-central Alberta adjacent to the Alberta-British Columbia boundary. In 1982, an Integrated Resource Inventory was initiated for this area utilizing information derived from aerial photographs, fieldwork and literature reviews. This study provides an inventory of the landforms, surficial deposits, soils, vegetation and climate of the area and identifies their characteristics and interrelationships.

The study area includes portions of the Wapiti Plains, Western Alberta Plains, Rocky Mountain Foothills and Rocky Mountains physiographic regions. During the pleistocene epoch the area was glaciated by both Cordilleran and Continental ice sheets in addition to localized alpine glaciation. Morainal, glaciofluvial and glaciolacustrine deposits are present as a result of glaciation. Post glacial reworking of these deposits has altered the landscape to some extent. As a result, recent colluvial, fluvial, eolian and organic deposits are also part of this landscape.

The vegetation in the study area falls within six ecoregions. These ecoregions are based on climate as expressed by the vegetation and range from the Alpine, which consists of heather and shrubland vegetation, to the Boreal Mixedwood which is characterized by aspen forests. Also, included in this range are the Subalpine (lodgepole pine, Engelmann spruce and subalpine fir dominated), Boreal Uplands (lodgepole pine dominated), Boreal Foothills (aspen, spruce and pine) and Montane (lodgepole pine and grassland).

The relationships among soil, vegetation, parent materials and topography are described in the report. The vegetation is classified to an association level and the soils to the subgroup level.

KEY WORDS: Deep Basin, NTS-83L, bedrock geology, surficial geology, ecoregions, vegetation, soils, climate, plant associations, wildlife, Ecological Land Classification, Physical Land Classification, Forage Inventory.

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PREFACE

The Deep Basin study was initiated in 1982 at the request of Scientific and Engineering Services and Research Division of Alberta Energy and Natural Resources. The purpose of this study was to provide baseline inventory data for assessment of the impact of large scale intensive development of oil and gas resources.

This report provides a discussion of methods employed in the inventory processes, detailed information on the physical and biological characteristics of the landscape and a general description of the natural resources of the area.

The text is accompanied by four ecological land classification maps at a scale of 1:100 000 and sixteen physical land classification maps at a scale of 1:50 000.

It is important to realize that the basic purpose of this study is to provide information for natural resource planning and management. For detailed operational planning and management further on-site examination may be necessary.

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LIST OF ABBREVIATIONS

Surficial Materials

C	Colluvium
E	Eolian
F	Fluvial
F*	Pre-glacial (Tertiary) gravels
GF	Glaciofluvial
GL	Glaciolacustrine
M	Morane
O	Organic
R	Rock
X	Residual

Surficial Material Modifiers

v	Veneers
b	Blankets

Soils

O.GL	Orthic Gray Luvisol
BR.GL	Brunisolic Gray Luvisol
PZ.GL	Podzolic Gray Luvisol
SZ.GL	Solonetzic Gray Luvisol
GL.GL	Gleyed Gray Luvisol
GLBR.GL	Gleyed Brunisolic Gray Luvisol
GLSZ.GL	Gleyed Solonetzic Gray Luvisol
O.DYB	Orthic Dystric Brunisol
E.DYB	Gleyed Eluviated Dystric Brunisol
GLE.DYB	Gleyed Eluviated Dystric Brunisol
O.EB	Eluviated Eutric Brunisol
E.EB	Eluviated Eutric Brunisol
GLE.EB	Gleyed Eluviated Eutric Brunisol
O.R	Orthic Regosol
CU.R	Cumulic Regosol
GL.R	Gleyed Regosol
GLCU.R	Gleyed Cumulic Regosol
O.G	Orthic Gleysol
R.G	Rego Gleysol
O.LG	Orthic Luvic Gleysol
TY.M	Typic Mesisol
T.M	Terric Mesisol

Textures

S	Sand
LS	Loamy sand
SL	Sandy loam
L	Loam
SiL	Silt loam
Si	Silt
SCL	Sandy clay loam
CL	Clay loam
SiCL	Silty clay loam
SC	Sandy clay
SiC	Silty clay
C	Clay

Textural Modifiers

g	Gravelly
k	Cobbly
r	Rubble

Drainage Classes

1	Rapidly drained
2	Well drained
3	Moderately well drained
4	Imperfectly drained
5	Poorly drained
6	Very poorly drained

PART I

1. INTRODUCTION

This report integrates the results of three natural resource inventories of the Deep Basin area (NTS 83-L); Physical Land Classification (PLC), Ecological Land Classification (ELC) and Forage Inventory. For the purposes of this study these inventories have used a common mapping base, so that component data will be compatible for managers and planners responsible for wise use and optimal allocation of a variety of resources. The classification systems employed in these inventories are hierarchical, to allow interpretations for resource use to be made at a variety of scales. The data presented in this report describe the inherent properties of the landscape, and are not interpreted for particular uses within this report.

Each of the component inventories had distinct objectives. Physical Land Classification is designed to meet the physical land resource data needs of Alberta Energy and Natural Resources and other governmental and research agencies. The system employs an open legend to classify the landscape according to its mode of origin, composition and form.

The objective of Ecological Land Classification is to provide information on the relationships between the physical and biological components of the landscape. This system classifies the landscape according to its physical characteristics as in the PLC system and incorporates the vegetative pattern to describe units according to plant species composition. The ELC uses a closed legend format to identify areas with recurring patterns of landform and vegetation which can subsequently be evaluated for various resource uses.

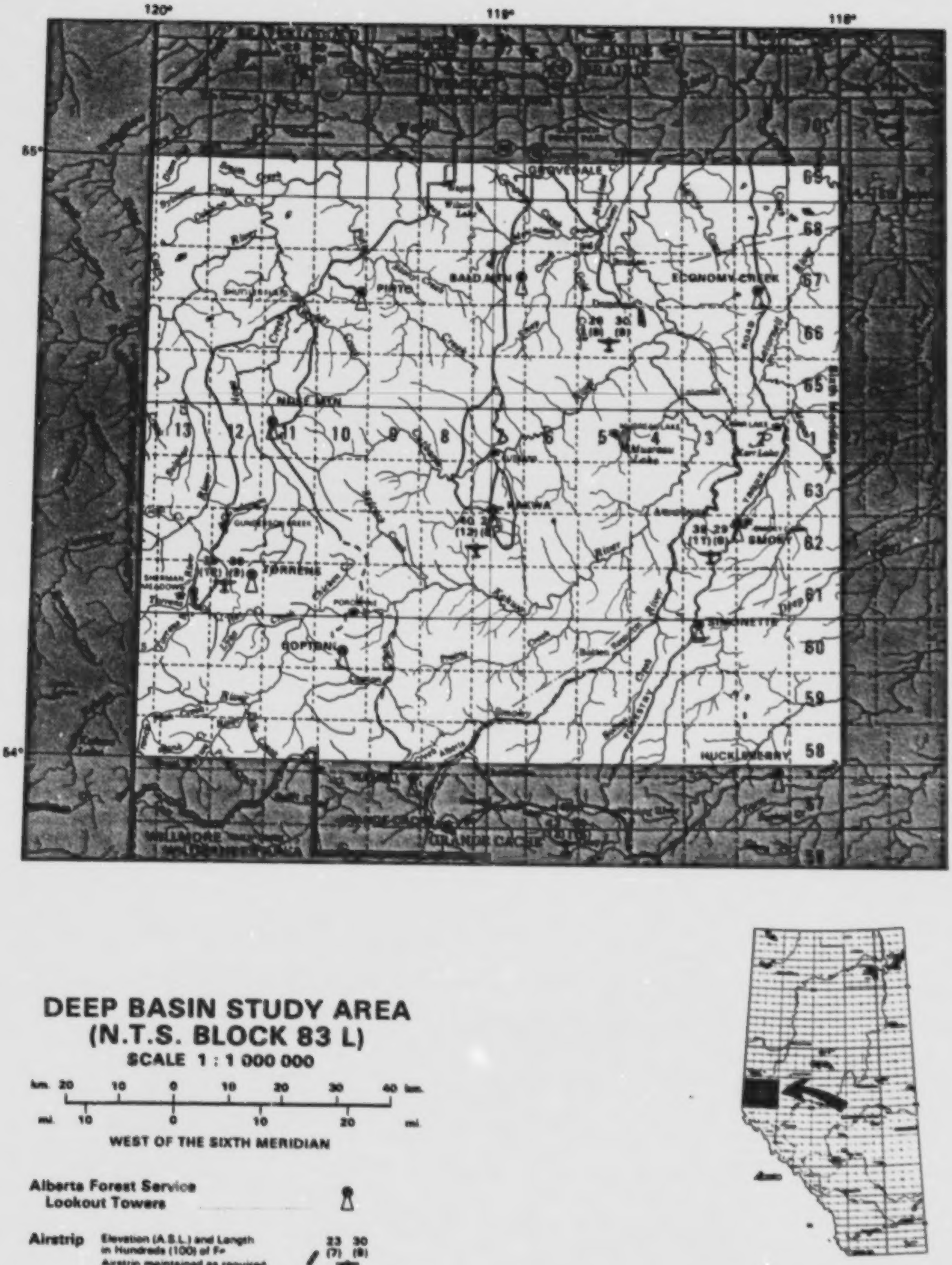
The Forage Inventory is an integral part of Ecological Land Classification in this report. Its purpose is to identify the plant associations characteristic of different sets of environmental conditions. The pattern of plant associations is related to the environmental pattern for each unit mapped in the Ecological Land Classification, but plant associations are not mapped individually.

2. LOCATION AND ACCESS

The Deep Basin study area is located in west-central Alberta adjacent to the British Columbia border (Figure 1). It includes the whole of NTS 83-L and extends from 54° to 55° north latitude and from 118° to 120° west longitude, encompassing an area of approximately 14,500 km^2 (5 600 mi.^{2}).

Access to the study area is provided mainly by the Forestry Trunk Road (Hwy. 940) which traverses the entire eastern portion of the study area. Two forestry roads by Proctor and Gamble (P & G) provide access from the north to the central and western portions of the area. The CANFOR road provides access from the north to the eastern portion of the study area and joins with the Forestry Trunk Road in Townshhip 64, Range 2, W6M. Access from the south is provided mainly by mining roads that run north from the Smoky River Coal Co. sites. In response to the increased demands created by improved access, Alberta Forest Service has constructed recreational areas at Two Lakes, Musreau Lake, Bison Flats, Shuttler Flats, Nose Lake and Economy Lake.

There are no major population centres in the study area: the town of Grande Prairie is located about 19 km north of the study area, and Grande Cache lies approximately 10 km to the south.


120°
119°
118°
55°
54°
GRANDE PRAIRIE
GROVEDALE
BALD MTN
ECONOMY CREEK
PINTO
NOSE MTN
KAKWA
SMOKY
TORRENS
SIMONETTE
HUCKLEBERRY
GRANDE CACHE
WILLMORE WILDERNESS PARK
13
12
11
10
9
8
7
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5
4
3
2
1
70
69
68
67
66
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62
61
60
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58
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
SCALE 1 : 1 000 000
km. 20 10 0 10 20 30 40 km.
mi. 10 0 10 20 mi.
WEST OF THE SIXTH MERIDIAN
Alberta Forest Service Lookout Towers
Airstrip
Elevation (A.S.L.) and Length in Hundreds (100) of Ft
Airstrip maintained as required use at PILOT DISCRETION
23 30
(7) (9)

Figure 1: Study Area Location

3. METHODS

The integrated resource inventory of the Deep Basin area incorporates three component inventories; Physical Land Classification (PLC), Ecological Land Classification (ELC), and Forage Inventory. To accomplish this, a common mapping base was adopted by PLC and ELC, and the Forage Inventory classification was incorporated as an integral part of the ELC. The three classifications are thus compatible, however, the report is also intended to allow users who only require one component inventory to readily extract the information they need. In addition, major river and stream valleys have been classified separately in the ELC maps.

3.1 Classification Systems

The Physical Land Classification uses a four-tiered hierarchy to separate the landscape into discrete units. The hierarchy is as follows:

Physiographic Region:

Topographically alike landscapes with similar relief, structural geology and elevation; mapped at 1:1 000 000 to 1:3 000 000.

Physiographic Subregion:

Distinct patterns of relief, geology and geomorphology, drainage pattern and density; mapped at 1:250 000 to 1:1 000 000.

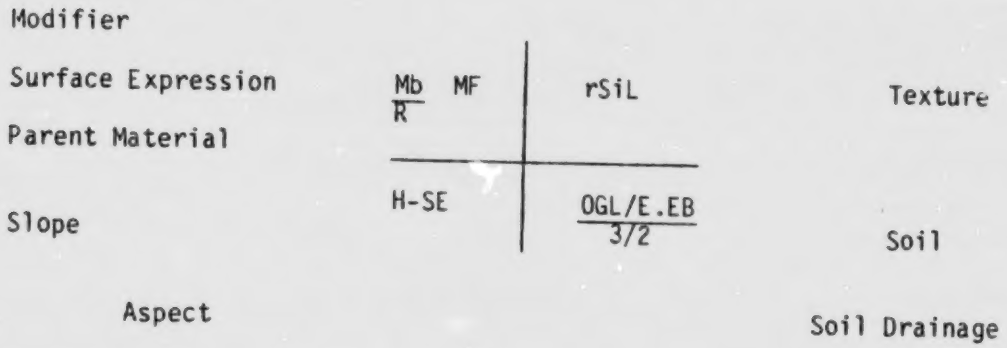
Geomorphic System:

Recurring patterns of landform as differentiated by origin, composition and surface expression; soils are classified and incorporated to either the great group or subgroup level; mapped at 1:50 000 to 1:250 000.

Geomorphic Unit

Homogeneous land unit differentiated on mode of origin, composition, surface expression, texture, slope, aspect, drainage; soils incorporated to subgroup family, series or type; mapped at 1;5 0000 to 1;50 000.

PLC is presented in the form of 16 maps at a scale of 1:50 000. Geomorphic units are labeled with an open legend format, e.g.


Modifier
Surface Expression
Parent Material
Slope
Aspect
Mb MF
R
rSiL
H-SE
OGL/E.EB
3/2
Texture
Soil
Soil Drainage

The other levels of the hierarchy are distinguished by different line weight and form. A full explanation of this open legend can be found on any one of the 16 PLC maps.

The Ecological Land Classification is also a four-tiered hierarchy as described below:

Ecoregion:

Area characterized by a distinctive regional climate as expressed by vegetation; mapped at 1:1 000 000 to 1:3 000 000.

Ecodistrict:

Distinct physiographic and/or geologic patterns; similar relief, geology, geomorphology and genesis of parent material; mapped at 1:250 000 to 1:1 000 000.

Ecosection:

Recurring patterns of slope, landform, soil and vegetation; mapped at 1:100 000 to 1:250 000.

Ecosite:

Unique recurring combination of vegetation, soil, landform and other environmental components; mapped at 1:10 000 to 1:20 000.

A total of 4 maps at 1:100 000 were produced for the ELC. The ecoregion designation appears as a broad, cross-hatched line while the ecodistricts and ecosections are of different line weights. The ecosite level of classification was not used in this study. The map symbols for the ecodistricts and ecosections are of a closed legend format. An example is as follows:

KF - M2

Ecodistrict (Kakwa Foothills)	Material Modifier (Moraine)	Ecosection Number

The Forage Inventory employs three levels of classification to describe vegetation; ecoregion, plant association and plant community. The plant community is a site specific description of vegetation and related environmental factors. Communities are grouped into plant associations which are an assemblage of plant communties with similar vegetation and environmental relationships. These associations are subsequently grouped by characteristic species groups which reflect climatic influences, to define ecoregion concepts.

For the purpose of this study two levels of the ELC and PLC hierarchy use a common map base. The physiographic subregion boundaries are the same as the ecodistrict boundaries and the geomorphic system delineations are the same as those for ecosections. The ecoregions and physiographic regions are based on different concepts so are not mapped as the same unit. The rationale for this is that vegetation and climate (which define ecoregion), while interacting with major physiographic differences, do not correspond exactly to divisions at the physiographic region level.

The geomorphic unit is presented on PLC maps as a further subdivision of the geomorphic system to provide greater detail which is useful for more site specific planning and operational management decisions. The Forage Inventory is not mapped directly at the plant association level, but the classification is incorporated into the ecosection descriptions within the report.

The valleys of major streams and rivers have been classified separately from the rest of the landscape in this report. This system of classification reflects the fact that these valleys are more similar to each other than they are to the uplands they cross, because of the dominant influence of erosional and depositional process.

Valleys have been mapped in their entirety at a scale of 1:100 000, to preserve their physical integrity for regional planning purposes. On the 1:50 000 scale maps individual landforms within valleys (valley sides, terraces, floodplains) are mapped separately using the PLC open legend, a format that may be more useful for local planning, management and operational concerns.

Streams and rivers are differentiated by stream order, valley form, floodplain characeristics, channel form and channel slope. Valley and floodplain surficial materials and vegetation are described for each fluvial system. These fluvial systems appear on ELC maps as the letter F followed by the system number, e.g. F12.

3.2 Mapping and Field Methods

Inventory procedures used for this study can be divided into four phases: preliminary interpretation, fieldwork, final classification and mapping, and field checking.

Aerial photographs are used in the preliminary phase to divide the landscape into discrete units to the geomorphic system/ecosection level of detail. These polygons are based on recurring patterns of landform, surface expression, and drainage. These preliminary maps and existing scientific information are subsequently used as a basis for design of a stratified sampling program.

Approximately 500 field sites were inventoried during the 1982 and 1983 field seasons. Elevation, aspect, slope, landform and parent materials, soil, internal drainage, ecological moisture regime, ecological nutrient regime and vegetation cover, and composition were described for each site. For the soil, horizon sequence, texture, structure, consistency, pH, clast content and rooting depths were described (CSSC, 1978). In addition, observations were made on effects of disturbance and successional patterns.

Plant species cover and composition were analyzed using a 20 x 20 m plot for tree species, a 5 x 5 m plot for the shrub layer, and five 1 x 0.5 m quadrants on a 20 m transect for forb, grass, moss and lichen cover. Plant communities identified in this analysis were subsequently grouped into plant associations using the Klinka-Phelps vegetation program and Environmental Site Program (Appendix B, Volume II).

Final classification and mapping invovled revision of preliminary polygons based on fieldwork, and the development of open (PLC) and closed (ELC) legends summarizing data collected in the field.

Following final revisions, a number of sites were selected to serve as a test of accuracy of the final maps. Approximately 60 sites were selected for field checking in the south half of NTS 83-L in 1982 and 1983. A similar number of sites were selected in the north half of the map sheet, but it was not possible to field check these sites for inclusion in this report. These sites will be field checked in 1984, and results for the entire map sheet will be published separately.

PART II - ECOLOGICAL AND PHYSICAL LAND CLASSIFICATION

1. ECOREGION

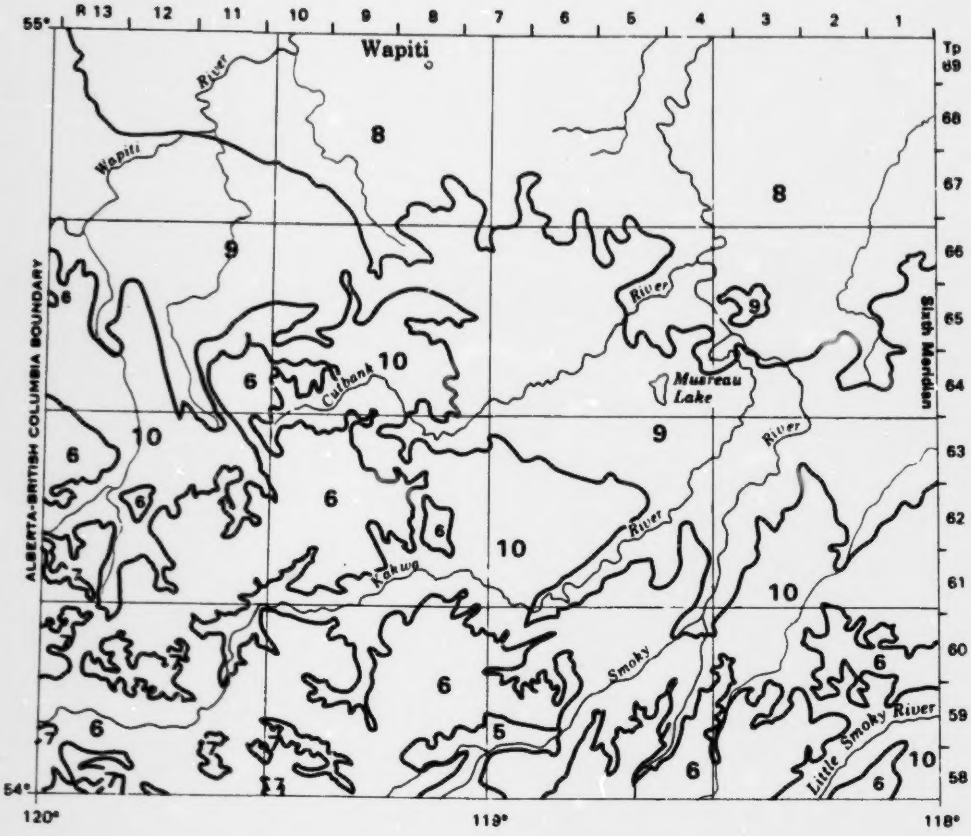
The ecoregions recognized in this study are based on the broad concepts presented in **Ecoregions of Alberta** (Strong and Leggat, 1981) with map revisions made possible by more intensive fieldwork and the inclusion of characteristic plant association on modal sites as a mapping criterion.

There are six ecoregions in the study area: Boreal Mixedwood, Boreal Foothills, Boreal Uplands, Subalpine, Alpine and Montane (Figure 2). The distinguishing features of each ecoregion are described below with detailed plant association descriptions and data appearing in Volume II.

1.1 Boreal Mixedwood

The Boreal Mixedwood Ecoregion (Ecoregion 8, Strong and Leggat) occurs in the northern portion of the study area (Figure 2) at lower elevations than the Boreal Foothills Ecoregion (below approximately 860 m asl).

The climate of this ecoregion is continental. More than 70% of yearly precipitation is received during the summer months, with July being the wettest month. Winter temperatures are colder than other ecoregions in the study area with chinooks not as important to the winter climate. Specific climatic parameters for stations within the study area are shown in Appendix E.


55°
R 13
12
11
10
9
8
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6
5
4
3
2
1
Wapiti
Wapiti
River
Tp
69
68
67
66
65
64
63
62
61
60
59
58
Sixth Meridian
ALBERTA-BRITISH COLUMBIA BOUNDARY
River
Cutbank
Musreau Lake
River
River
Kakwa
Smoky
Little Smoky River
8
8
9
9
9
10
10
10
10
10
6
6
6
6
6
6
6
6
5
54°
120°
119°
118°

DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)

SCALE 1 : 1 000 000

km. 20 10 0 10 20 30 40 km.

mi. 10 0 10 20 mi.

WEST OF THE SIXTH MERIDIAN

ECOREGIONS

5	Montane Variant
6	Subalpine
7	Alpine
8	Boreal Mixedwood
9	Boreal Foothills
10	Boreal Uplands

Figure 2: Ecoregions

The topography of the area is level to undulating. Glaciolacustrine materials dominate as this is a former glacial lake basin.

Aspen dominates the forest vegetation on moderately well drained modal sites with luvisolic soils in this ecoregion. Understory vegetation typically consists of a well developed deciduous shrub layer of rose and low-bush cranberry and a variety of herbaceous plants and grasses. The moss layer is usually sparse. Secondary succession is by white spruce, although a high frequency of fires has slowed its establishment over large portions of the ecoregion in the study area. Invasion by spruce will be slow due to lack of an adequate seed source in many years. As aspen stands succeed to white spruce the shrub and herb layers tend to decrease in cover while the moss layer increases.

Balsam poplar occurs on imperfectly drained sites with gleyed luvisolic and gleysolic soils. Aspen and white spruce are often a component of these stands. Understory vegetation is generally more lush than on modal sites with the presence of bracted honeysuckle and red osier dogwood reflecting higher moisture availability. Succession to white spruce would be expected to be faster on these moisture sites but vegetation competition from shrub and herb layers slows seedling establishment.

Lodgepole pine is restricted to dry sites with coarse textured eolian and glaciofluvial materials. Shrub and forb layers are generally poorly developed on these sites with lichens commonly occurring. Soils are dominantly Eluviated Eutric Brunisols with some Brunisolic Gray Luvisols.

Poorly drained areas support black spruce and tamarack wetlands with some sedge meadows and open shrubland occurring depending on local drainage conditions. Gleysols and organic soils are common at these sites.

There are 13 associations described for the Boreal Mixedwood in this study (Table 1). A schematic profile diagram showing generalized relationships between these associations is shown in Figure 3.

The upper elevation of the Boreal Mixedwood Ecoregion in this study area is approximately 860 m. Below this elevation lodgepole pine ceases to be a component of aspen stands on modal sites. The dry mixedwood subregion of the ecoregion was identified by Strong and Leggat in the northern portion of the study area at lower elevations. There were no vegetation differences observed in this study to substantiate this split; however, further study is required to verify its occurrence.

Table 1

PLANT ASSOCIATIONS OF THE BOREAL MIXEDWOOD ECOREGION

PLANT ASSOCIATION	SITE DESCRIPTION	DOMINANT PARENT MATERIAL	DRAINAGE
Trembling Aspen/Low-bush Cranberry/ Dewberry	Modal sites	Glaciolacustrine clay loam	Well to moderately well
Trembling Aspen/Prickly Rose/Peavine	Coarse textured soils	Glaciofluvial or eolian sand	Well to rapid
Trembling Aspen-Balsam Poplar/Bracted Honeysuckle/Dewberry	Depressional sites or seepage areas	Glaciolacustrine clay loam	Well to moderately well
Trembling Aspen/Beaked Hazelnut/Wild Sarsaparilla	Warm relatively dry sites	Glaciofluvial and fluvial silt sand	Well to moderately well
Trembling Aspen/Thimbleberry/Wild Sarsaparilla	Relatively rich seepage areas	Variable	Moderately well to well
Lodgepole Pine/Blueberry/Lichen	Coarse textured dry sites	Eolian and glaciofluvial sand	Rapidly
Lodgepole Pine/Feathermoss	Moderately coarse textured soils	Glaciofluvial and eolian sand	Well to rapid
Lodgepole Pine/Low-bush Cranberry/ Wild Sarsaparilla	Relatively dry sites	Eolian over glaciofluvial sands	Well
Black Spruce-Lodgepole Pine/ Labrador Tea/Feathermoss	Lower slope moist sites	Variable	Moderately well to imperfect
White Spruce/Bracted Honeysuckle/ Dewberry	Relatively rich moist areas	Variable	Imperfect to well
Black Spruce/Labrador Tea/ Feathermoss	Depressional areas	Organic and glaciolacustrine	Imperfect to very poor
Tamarack-Black Spruce/Sedge/ Sphagnum	Very wet depressional sites	Organic	Poor to very poor
White Spruce/Prickly Rose/Hairy Wild Rye	Dry moderately coarse textured soils	Eolian and glacio-glaciofluvial	Well to rapid rapid

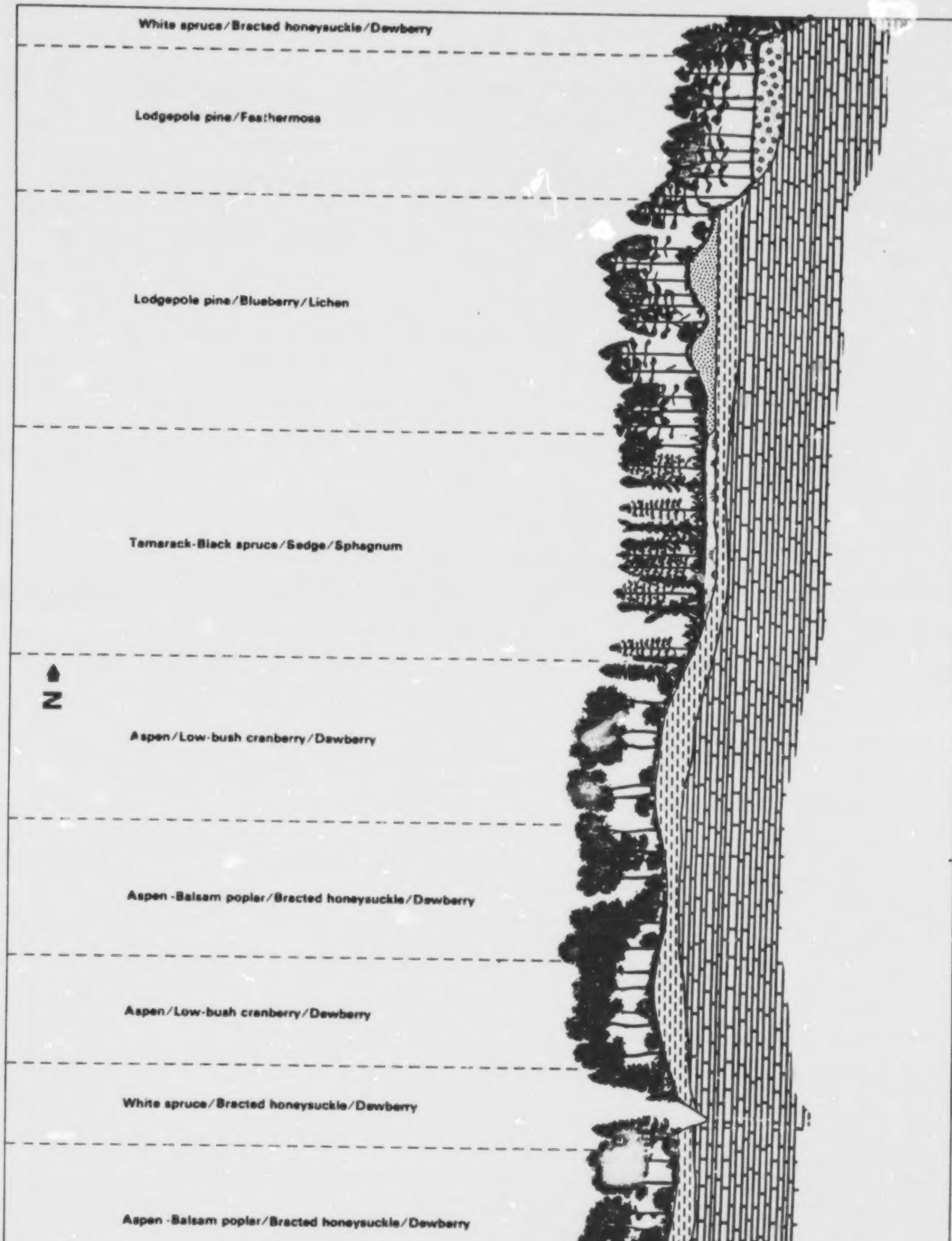
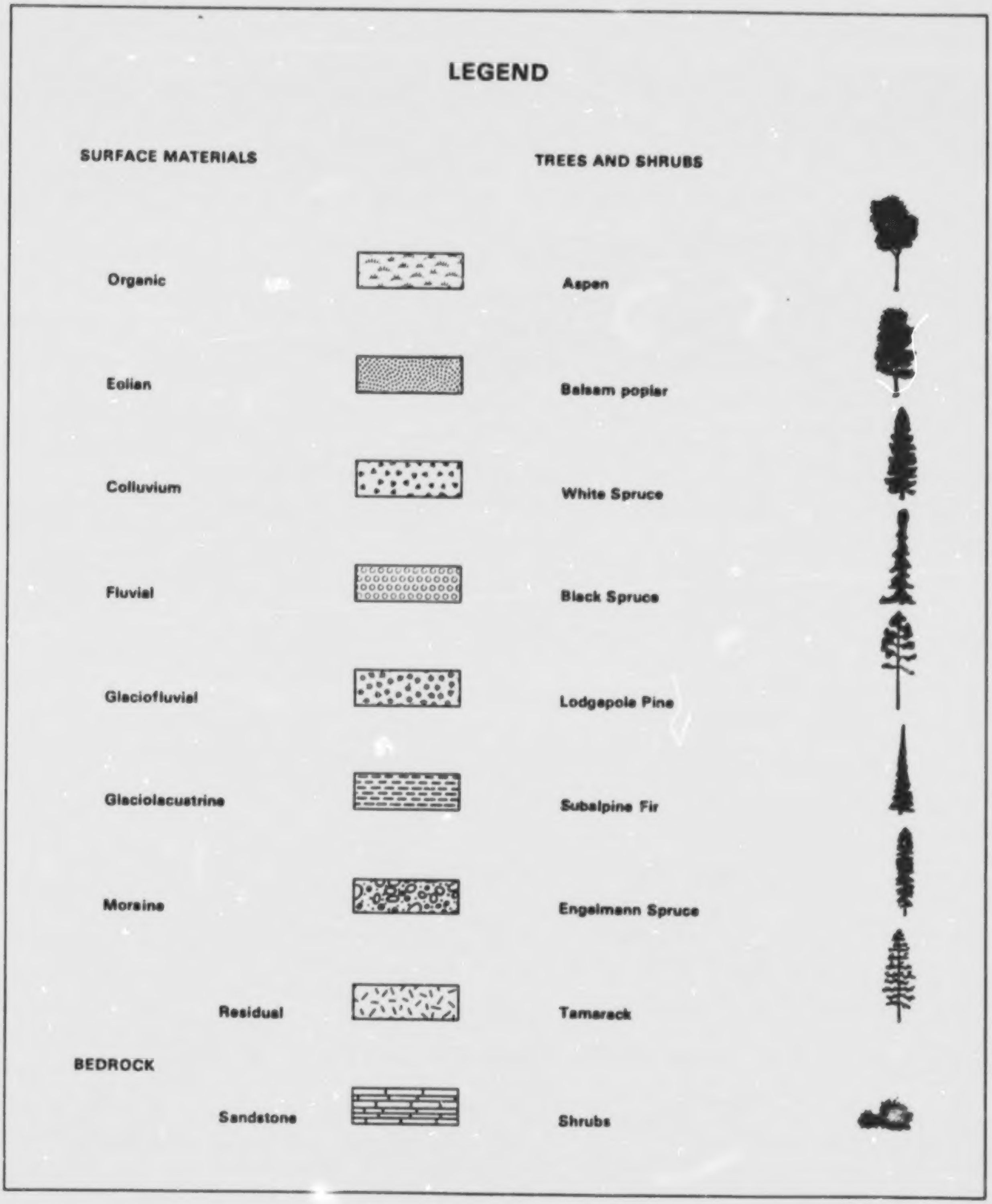

White spruce/Bracted honeysuckle/Dewberry
Lodgepole pine/Feathermoss
Lodgepole pine/Blueberry/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
N
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry
White spruce/Bracted honeysuckle/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry

Figure 3: Schematic Profile of Landscape/Plant Association Relationships in the Boreal Mixedwood Ecoregion


LEGEND
SURFACE MATERIALS
TREES AND SHRUBS
Organic
Aspen
Eolian
Balsam poplar
Colluvium
White Spruce
Fluvial
Black Spruce
Glaciofluvial
Lodgepole Pine
Glaciolacustrine
Subalpine Fir
Moraine
Engelmann Spruce
Residual
Tamarack
BEDROCK
Sandstone
Shrubs

1.2 Boreal Foothills

The Boreal Foothills Ecoregion (Ecoregion 9, Strong and Leggat, 1982) occupies a relatively narrow band trending northwest to southeast across the study area (Figure 2). It occurs above the Boreal Mixedwood Ecoregion from approximately 860 m to 1 060 m above sea level (asl).

The ecoregion represents an ecotone between Boreal and Cordilleran vegetation which is reflected in the change from deciduous dominated to coniferous dominated forests. The climate of the ecoregion results from both boreal and cordilleran influences. The boreal influence produces a summer high precipitation regime while the Cordilleran influence results in increased winter temperature and precipitation compared to the Boreal Mixedwood. Specific climatic parameters for climatc stations within the study area are shown in Appendix E.

The topography consists of undulating to rolling plateau remnants. Glacial till is the dominant surficial material:

Aspen, lodgepole pine and white spruce occur interchangeably or in mixtures on moderately well drained modal sites in the ecoregion. The deciduous component usually dominates at the lower elevations, while lodgepole pine is more prevalent in the upper portions. Understory vegetation in younger stands consists of well developed shrub and herb layers dominated by low-bush cranberry and wild sarsaparilla, respectively. Secondary succession is to white spruce with understory species diversity and density decreasing in the older stands.

Rapidly and well-drained sites are usually vegetated by lodgepole pine which can tolerate dry conditions. Understory species include lichens which reflect the dry site conditions. Soils are generally poorly developed Brunisols.

Imperfectly drained sites are dominated by lodgepole pine and black spruce with succession to black spruce. Understory vegetation is dominated by mosses and labrador tea. Common soils are Gleyed Luvisols and Gleysols.

There are eight associations identified for the ecoregion in the study area (Table 2). A schematic profile diagram showing generalized relationships between associations is shown in Figure 4.

The mapping criteria used for delineating the Boreal Foothills ecoregion in this study are based on the modal site concept. At the upper elevations, the Lodgepole pine/Low-bush cranberry/Wild sarsaparilla association predominates. These stands usually have a component of aspen in the overstory which becomes restricted to scattered clones near the upper elevation limits. Modal sites at lower elevations characteristically support the Aspen/Low-bush cranberry/Wild sarsaparilla association which has a pine component in the overstory. A very similar association occurs in the Boreal Mixedwood, however, pine is generally absent.

TABLE 2

PLANT ASSOCIATIONS OF THE BOREAL FOOTHILLS ECOREGION

PLANT ASSOCIATION	SITE DESCRIPTION	DOMINANT PARENT MATERIAL	DRAINAGE
Lodgepole Pine/Low-bush Cranberry/ Wild Sarsaparilla	Level to strongly sloping uplands	Moraine	Well to imperfect
Trembling Aspen/Low-bush Cranberry/ Wild Sarsaparilla	Nearly level to strongly sloping uplands	Moraine	Well to imperfect
White Spruce/Low-bush Cranberry/ Dewberry	Gently to moderately sloping north-facing uplands	Moraine	Well to imperfect
Lodgepole Pine/Labrador Tea/ Lichen	Dry sites with coarse textured soils	Glaciofluvial or eolian	Well to rapid
Lodgepole Pine/Labrador Tea/ Feathermoss	Depressional and valley bottom locations	Moraine and glaciofluvial over moraine	Well to imperfect
Black Spruce/Feathermoss	Valley bottoms	Lacustrine and organic	Poor to very poor
Tamarack-Black Spruce/Dwarf Birch/Sphagnum	Lower slope seepage areas	Fluvial or moraine	Moderately well to poor
White Spruce/Horsetail	Lower slope seepage areas	Fluvial or moraine	Moderately well to poor

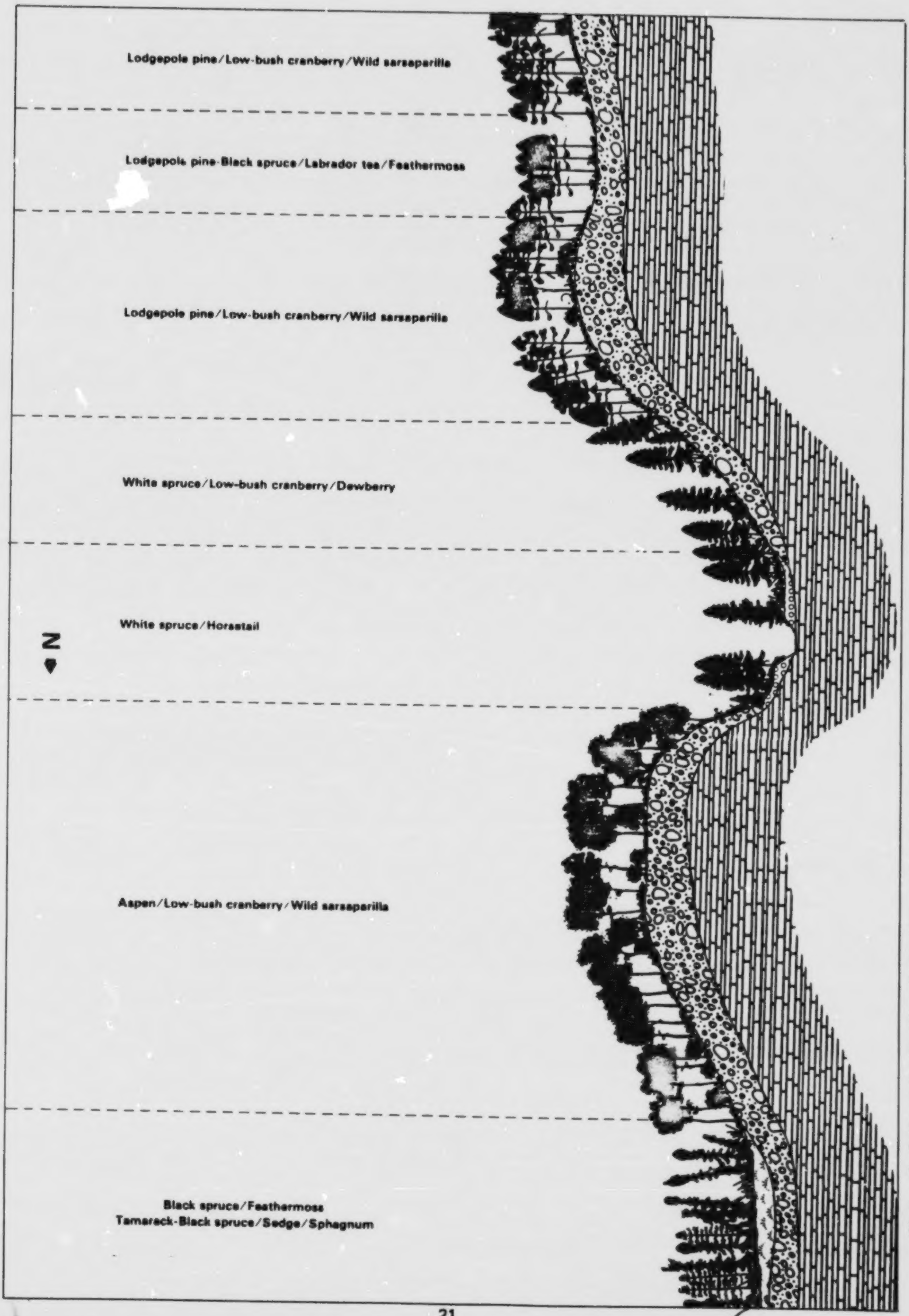

Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
White spruce/Horsetail
N
Aspen/Low-bush cranberry/Wild sarsaparilla
Black spruce/Feathermoss
Tamarack-Black spruce/Sedge/Sphagnum

Figure 4: Schematic Profile of Landscape/Plant Association Relationships in the Boreal Foothills Ecoregion

1.3 Boreal Uplands

The Boreal Uplands Ecoregion (Ecoregion 9, Strong and Leggat, 1982) occupies a band trending northwest to southeast across the south central portion of the study araa (Figure 2). It occurs above the Boreal Foothills at elevations ranging from approximately 1 060 m to 1 280 m asl.

The ecoregion resembles the Subalpine as coniferous forests are prevalent in both. However, the characteristic understory species are different. In addition, the potential climax species is considered to be white spruce or black spruce in the Boreal Uplands while Engelmann spruce or Engelmann spruce-white spruce hybrids are considered to be climax species in the Subalpine.

The climate of the Boreal Uplands shows a Cordilleran influence which produces warmer winter temperatures and cooler summer temperatures than other boreal ecoregions experience. The boreal influence, Continental precipitation regime, contributes maximum precipitation in the May to September period. Specific climatic parameters for climatic stations within the study area are shown in Appendix E.

The topography consists of undulating and rolling plateau remnants at higher elevations than the Boreal Foothills Ecoregion. Morainal and residual materials are dominant.

Lodgepole pine dominates the overstory on modal sites within the Boreal Uplands with white and black spruce as potential climax species.

In general, black spruce appears to be more prevalent in the pine stands occurring in slightly wetter locations. Understory vegetation on modal sites is not as diverse as in the Boreal Foothills. Ericaceous shrubs are common and the herb layer is generally sparse. Brunisolic Gray Luvisols predominate but Eluviated Eutric Brunisols are also common.

Imperfectly to poorly drained depressional areas are black spruce dominated with dwarf birch shrublands being common in the wettest of these sites. Organic and gleysolic soils are prevalent in these locations.

Aspen is restricted to steep south-facing slopes in the Boreal Uplands where temperatures are warmer due to increased solar radiation. Understory species in these stands reflect dry site conditions.

There are 11 associations identified in this study for the Boreal Uplands ecoregion (Table 3). A schematic diagram showing generalized relationship between associations is shown in Figure 5.

The upper elevation limit of the Boreal Uplands lies at about 1 280 m where the Lodgepole pine/White-flowered rhododendron/Feathermoss association generally replaces the Lodgepole pine/Labrador tea-Tall bilberry asociation on modal sites. The lower elevation boundary occurs at approximately 1 060 m where the Lodgepole pine/Low-bush cranberry/Wild sarsaparilla association of the Boreal Foothills replaces the Lodgepole pine/Labrador tea/Feathermoss association on modal sites.

TABLE 3

PLANT ASSOCIATIONS OF THE BOREAL UPLANDS ECOREGION

PLANT ASSOCIATION	SITE DESCRIPTION	DOMINANT PARENT MATERIAL	DRAINAGE
Lodgepole Pine/Labrador Tea/Feathermoss	Modal conditions	Dominantly morainal	Well to imperfect
Lodgepole Pine/Labrador Tea-Tall Bilberry	Upper elevation modal sites	Moraine over bedrock	Well to imperfect
Lodgepole Pine/Alder/Dewberry	Steeply sloping seepage areas	Moraine over bedrock	Well to imperfect
Lodgepole Pine/Alder/Labrador Tea	Gently sloping seepage areas	Moraine over bedrock	Well to imperfect
Lodgepole Pine/Twisted Stalk/Feathermoss	Level to very strong slopes	Colluvial and morainal veneers over bedrock	Moderately well
White Spruce/Feathermoss	Near climax stands	Morainal and colluvial	Well to imperfect
Black Spruce-Lodgepole Pine/Labrador Tea-Tall Bilberry	Gently sloping modal sites	Morainal	Well to imperfect
Black Spruce/Horsetail/Sphagnum	Moist lower slopes and depressions	Moraine often with organic veneers	Moderately well to poor
Dwarf Birch/Sedge/Sphagnum	Wet depressional sites	Organic veneer	Imperfect to poor
Dry Meadow-Fluvial	Valley bottoms	Fluvial and moraine	Moderately well to poor
Trembling Aspen/Buffaloberry/Showy Aster	Steep south aspects	Colluvium over bedrock	Well

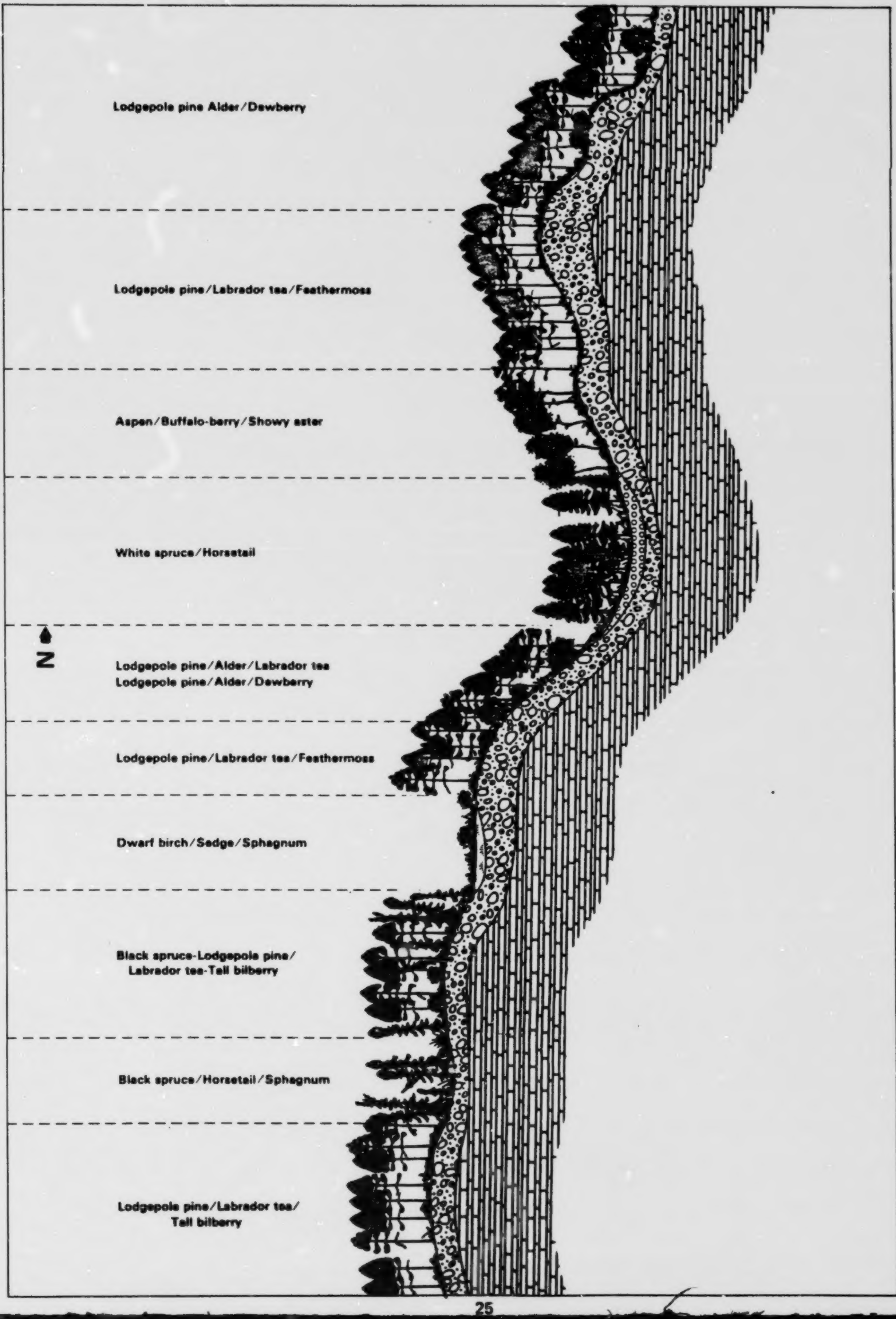

Lodgepole pine Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
Aspen/Buffalo-berry/Showy aster
White spruce/Horsetail
N
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Black spruce-Lodgepole pine/
Labrador tea-Tall bilberry
Black spruce/Horsetail/Sphagnum
Lodgepole pine/Labrador tea/
Tall bilberry

Figure 5: Schematic Profile of Landscape/Plant Association Relationships in the Boreal Uplands Ecoregion

1.4 Subalpine

The Subalpine Ecoregion (Ecoregion 6, Strong and Leggat, 1982) occurs in the southern portion of the study area (Figure 2). It is altitudinally situated above the Boreal Uplands and below the Alpine Ecoregion. Elevations range from approximately 1 280 to 2 000 asl.

Closed coniferous forest dominates the Subalpine landscape with open stands occurring only at higher elevations where "krummholtz" forest develops. Meadow and shrubland vegetation is prevalent only in cool, moist depressional areas.

The ecoregion has a Cordilleran climate characterized by cold snowy winters and showery cool summers. Specific climatic parameters based on climatic records within the study area are shown in Appendix E.

The topography varies from rolling plateau remnants to foothill ridges and sub-parallel mountain ranges. Materials are morainal, residual and colluvial.

Lodgepole pine dominates on modal sites at lower elevations. Engelmann x white spruce, Engelmann spruce and alpine fir are a common component of these stands and would be expected to be the successional species. The dominance of pine can be attributed largely to the extensive fire history of the area. Engelmann spruce and alpine fir become predominant at the mid and upper elevations of the Subalpine. This is probably due to the cooler, moister conditions encountered at higher elevations, which favor spruce and fir growth, as well as a lower frequency of large fires where site conditions tend to be more moist. Understory vegetation reflects the change from a boreal to subalpine climate with white-flowered rhododendron becoming dominant in the shrub layer in many stands.

Grasslands are scattered through the ecoregion on upper portions of steep south-facing slopes. These are a result of exposure effects which preclude the growth of trees. Meadow and shrubland vegetation types are encountered in valley bottom locations usually near small drainage courses. In these instances the combination of abundant moisture and cold air drainage presents establishment of tree species.

There are 10 associations identified for the subalpine in this study (Table 4). A schematic profile diagram illustrating general relationships between associations is shown in Figure 6.

The lower elevation boundary of this ecoregion in the study area is considered to be where the Lodgepole pine/White-flowered rhododendron/ Feathermoss association assumes dominance on modal sites. This occurs at approximately 1 280 m. The upper boundary is defined by the absence of tree species in the Alpine Ecoregion.

TABLE 4

PLANT ASSOCIATIONS OF THE SUBALPINE ECOREGION

PLANT ASSOCIATION	SITE DESCRIPTION	DOMINANT PARENT MATERIAL	DRAINAGE
Lodgepole Pine/White-Flowered Rhododendron/Feathermoss	Modal sites	Moraine and moraine veneers over bedrock	Well to moderately
Engelmann Spruce-Alpine Fir/White-Flowered Rhododendron/Feathermoss	Climax stands	Moraine and residual	Well to poor
Engelmann Spruce-Alpine Fir/Red Heather	Steep northerly slopes at higher elevations	Colluvium	Moderately well to well
Lodgepole Pine/Tall Bilberry/Five-Leaved Bramble	Modal sites at lower elevations	Moraine veneers over bedrock	Well to poor
Black Spruce-Lodgepole Pine/Tall Bilberry	Relatively moist sites at lower elevations	Moraine and saprolite	Moderately well to imperfect
Engelmann x White Spruce/Feathermoss	Northerly aspects	Colluvial, moraine, fluvial	Moderately well to well
Lodgepole Pine/Hairy Wild Rye	Steep south-facing slopes	Colluvial and morainal	Moderately well to rapid
Dwarf Birch/Sedge/Sphagnum	Wet valley bottoms and depressions	Organic, morainal and fluvial	Imperfect to poor
Dry Meadow-Fluvial	Relatively moist valley bottoms	Fluvial, morainal	Moderately well to poor
Subalpine Grassland	South-facing ridge tops	Residual	Rapid to well

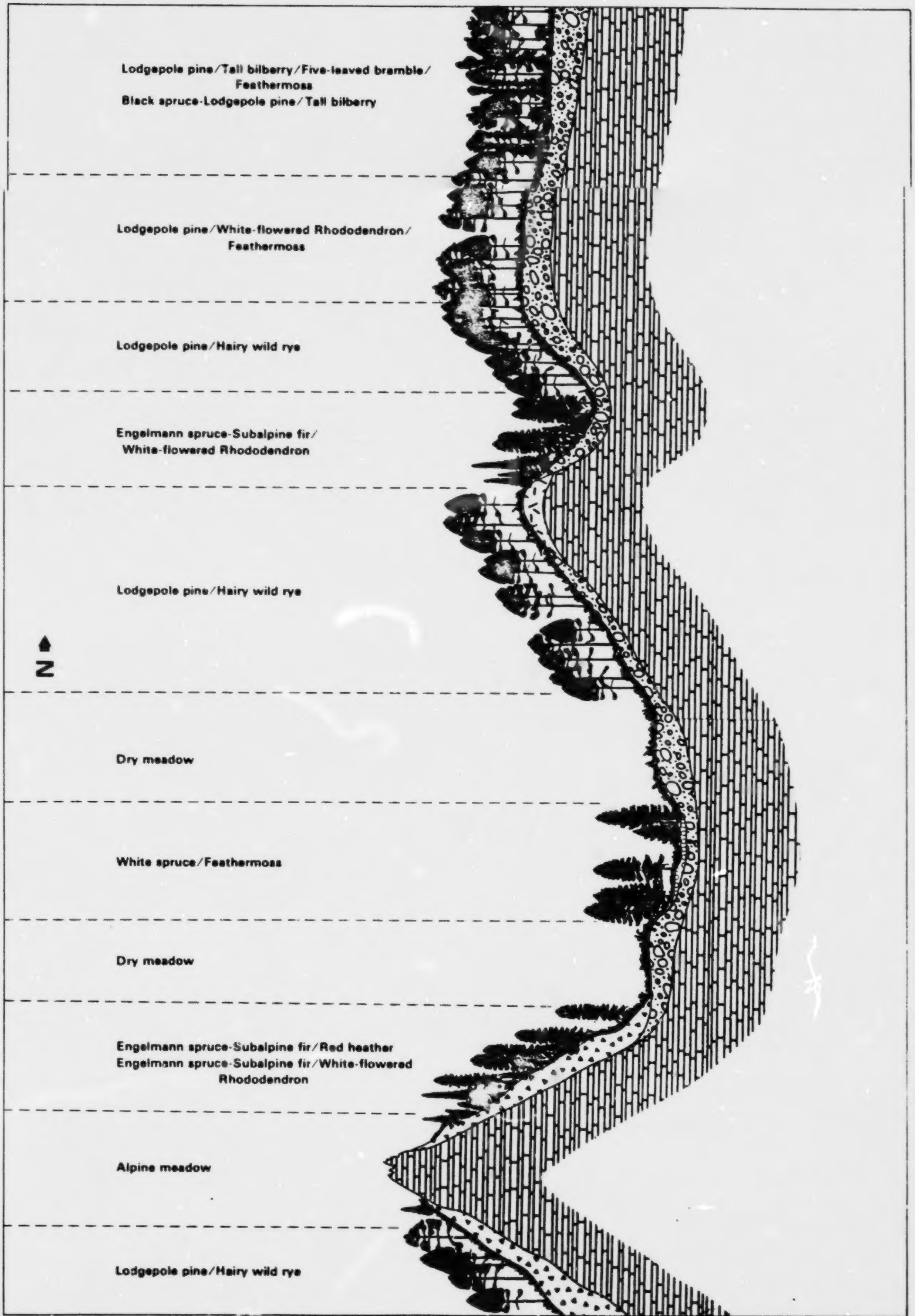

Lodgepole pine/Tall bilberry/Five-leaved bramble/ Feathermoss
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/White-flowered Rhododendron/ Feathermoss
Lodgepole pine/Hairy wild rye
Engelmann spruce-Subalpine fir/ White-flowered Rhododendron
Lodgepole pine/Hairy wild rye
N
Dry meadow
White spruce/Feathermoss
Dry meadow
Engelmann spruce-Subalpine fir/Red heather
Engelmann spruce-Subalpine fir/White-flowered Rhododendron
Alpine meadow
Lodgepole pine/Hairy wild rye

Figure 6: Schematic Profile of Landscape/Plant Association Relationships in the Subalpine Ecoregion

1.5 Alpine

The Alpine Ecoregion (Ecoregion 7, Strong and Leggat 1982) occurs in the southwestern corner of the study area (Figure 2) generally above 2 000 m asl.

In the Lower Alpine, willow and dwarf birch communities and "islands" of krumholtz occur. The Middle Alpine is characterized by relatively continuous heather and snowbed communities, while the Upper Alpine is poorly vegetated due to the cool summer temperatures and exposure to wind. Rocky outcrops and stonefield lichen communities are typical of the Alpine Ecoregion.

This ecoregion has a more severe Cordilleran climate than the Subalpine. The overriding climatic elements which characterize the Alpine are strong winds, long winters, and cool summers. Below freezing temperatures are common, even during the warmest months. Precipitation is high during all months, with a tendency for greater precipitation during winter. As there is no overstory vegetation, the surface displays a highly variable microclimate. During summer, the climate of steep south-facing slopes differs markedly from that of the north-facing slopes. During winter, southwest to northwest-facing slopes may be completely snow-free, whereas east aspects or protected pockets may have snow cover several metres deep, possibly lasting well into summer or even year-round. Specific climatic data for stations within the Subalpine are given in Appendix E.

Vegetation data collected in the Alpine was not sorted into plant associations due to the small number of plots sampled. However, a listing of vegetation composition for specific plots is given in Volume II.

1.6 Montane

The area along the Smoky River up to its confluence with Sheep Creek in the southern portion of the study has a unique vegetation pattern that is not typical of the other ecoregions. The influence of chinook winds along the river valley has allowed the development of grassland communities intermixed with aspen and lodgepole pine stands which have understories reflecting dry site conditions. This area has been described as Montane (Figure 2) as it does resemble Montane conditions found in river valleys further south in the province in the Athabasca, North Saskatchewan and Bow River valleys.

Only two vegetation associations have been sampled in this area (Table 5). The grassland communities in the area were not sampled, however, they are relatively common on steep exposed slopes.

TABLE 5

PLANT ASSOCIATIONS OF THE MONTANE ECOREGION

PLANT ASSOCIATION	SITE DESCRIPTION	DOMINANT PARENT MATERIAL	DRAINAGE
Trembling Aspen/Prickly Rose/Hairy Wild Rye	Relatively dry sits	Fluvial, moraine, colluvium	Well
Lodgepole Pine-Trembling Aspen/ Bearberry	Dry south-facing slopes	Colluvium, moraine	Well

2. LAND CLASSIFICATION

The first level of division, the region, is based on major differences in elevation, relief and structural geology. Within the study area four major regions were defined (Figure 7).

1. Wapiti Plains
2. Western Alberta Plains
3. Rocky Mountains Foothills
4. Rocky Mountains

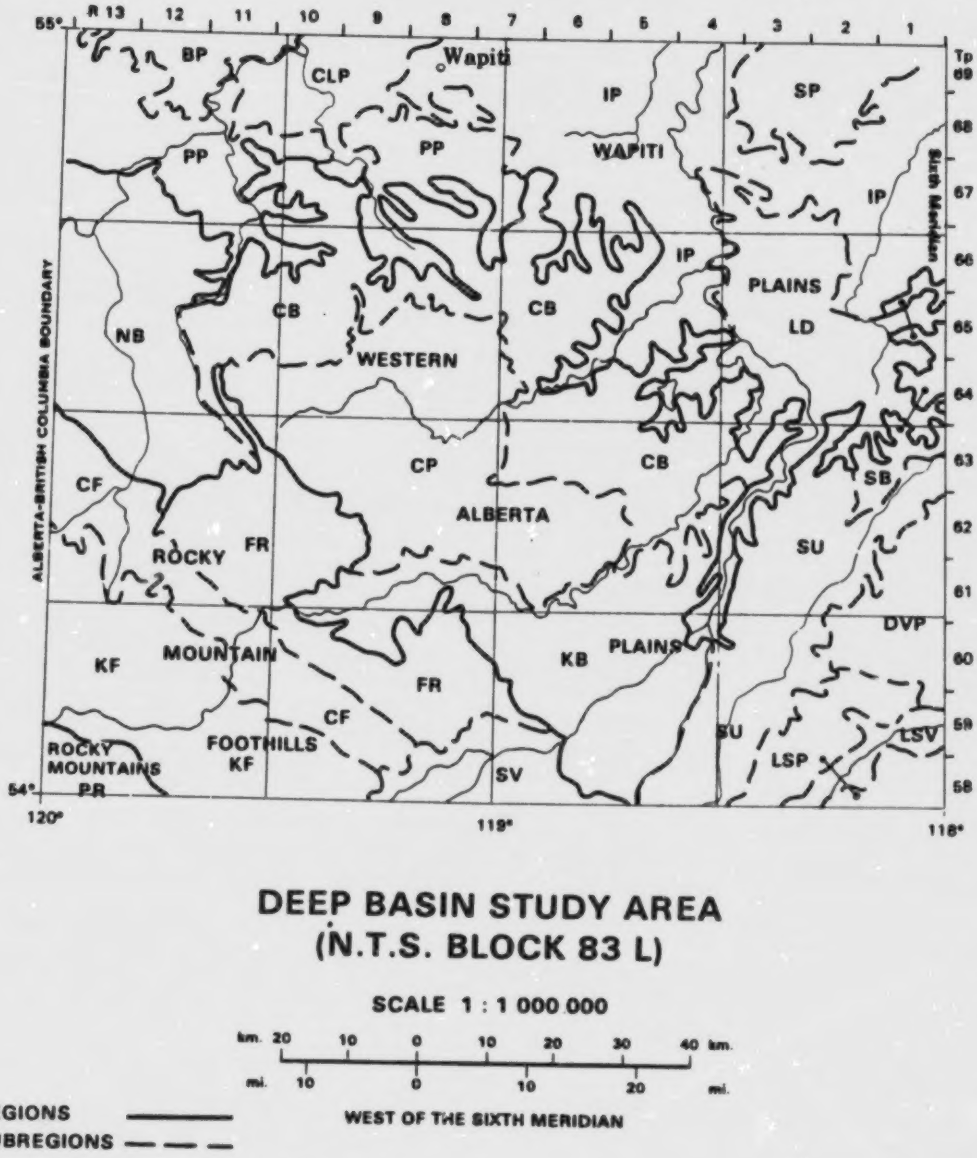
Each of these regions have been subdivided into subregions (ecodistricts) which are based on differences in patterns of relief, geology and geomorphology. Within the study area twenty such subdivisions have been identified.

The third stratification level recognized consists of 184 systems/ecosections. These are essentially landform, parent geologic material, vegetation subdivisions and are described within their respective subregions.

2.1 Wapiti Plains Region

The northern portion of the study area lies within the Wapiti Plains Region (Figure 7). Elevations range from 550 m within the Smoky River valley to approximately 1 050 m along the British Columbia border.

The area is underlain structurally by the eastern limb of the broad, gently dipping Alberta syncline. Bedrock is of the Wapiti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Wapiti
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WAPITI
IP
Sixth Meridian
IP
PLAINS
LD
NB
CB
CB
WESTERN
ALBERTA-BRITISH COLUMBIA BOUNDARY
CP
CB
CF
ALBERTA
SB
ROCKY
FR
SU
DVP
KF
MOUNTAIN
KB
PLAINS
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DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)

SCALE 1 : 1 000 000

WEST OF THE SIXTH MERIDIAN

REGIONS ———

SUBREGIONS — — —

REGIONS	SUBREGIONS
ROCKY MOUNTAINS	Park Ranges (PR)
WESTERN ALBERTA PLAINS	Cutbank Benchlands (CB) Cutbank Plateau (CP) Deep Valley Plateau (DVP) Kakwa Benchlands (KB) Simonette Benchlands (SB) Simonette Uplands (SU) Little Smoky Plain (LSP) Little Smoky Valley (LSV) Narraway Benchlands (NB)
ROCKY MOUNTAIN FOOTHILLS	Copton Foothills (CF) Foothill Ridge (FR) Kakwa Foothills (KF) Smoky Valley (SV)
WAPITI PLAINS	Beaverlodge Plain (BP) Clairmont Plain (CLP) Iosegun Plain (IP) Latornell Delta (LD) Pinto Plain (PP) Smoky Plain (SP)

Figure 7: Physiographic Regions and Subregions

Formation (Figure 3) and is masked by thick surficial materials. Bedrock expsoures are common within major river valleys, namely the Smoky and Wapiti Rivers.

The general landscape is characterized by level to undulating topography with varied local relief of 10-50 m. Small upland areas are also present and extend up to 260 m above the plain. In addition, relief within the deeply incised river valleys varies from 90 to 200 m.

Surficial materials of the Plains region are dominantly glaciolacustrine and glaciofluvial sediments with significant amounts of till deposits. Minor amounts of eolian, organic and fluvial materials are also present.

The Wapiti Plains lies within the Boreal Mixedwood ecoregion and parts of the Boreal Foothills ecoregion. Aspen forests are dominant with lodgepole pine forests and black spruce/tamarack wetlands also being significant.

The Plains region has been subdivided into six subregions/ ecodistricts. Topography, surficial materials and vegetation within each subregion are shown in Table 6.

Table 6

MAJOR CHARACTERISTICS OF THE SUBREGIONS IN THE WAPITI PLAINS

SUBREGION	TOPOGRAPHY	SURFICIAL MATERIALS	VEGETATION
Beaverlodge Plain*	Gently undulating to rolling plain	Glaciolacustrine, glaciofluvial veneers and organics	Aspen/Balsam poplar forest
Clairmont Plain*	Gently undulating plain with depressional lowlands	Glaciolacustrine, eolian, some glaciofluvial veneers and organics	Aspen/Balsam poplar forest-minor inclusions of spruce
Isoegun Plain*	Gently rolling plain	Glaciolacustrine, with some glaciofluvial and eolian veneers over till and glaciolacustrine	Aspen/Balsam poplar forest-minor inclusions of spruce and pine
Latornell Delta*	Level to inclined dissected deltaic plain	Glaciofluvial, glaciolacustrine, eolian veneers and blankets over till, some organics	Aspen/Balsam poplar/White spruce forest - inclusions of Black spruce/Lodgepole pine
Pinto Plain*	Subdued to rolling bedrock controlled plain	Moraine, some eolian veneers and blankets over till, glaciofluvial, organics and glaciolacustrine veners	Aspen/Lodgepole pine forest-inclusions of spruce/tamarack are common
Smoky Plain*	Depressional to gently undulating plain	Organic, eolian and some glaciolacustrine	Black spruce-Tamarack/Sedge-with Aspen/Balsam poplar, some lodgepole pine

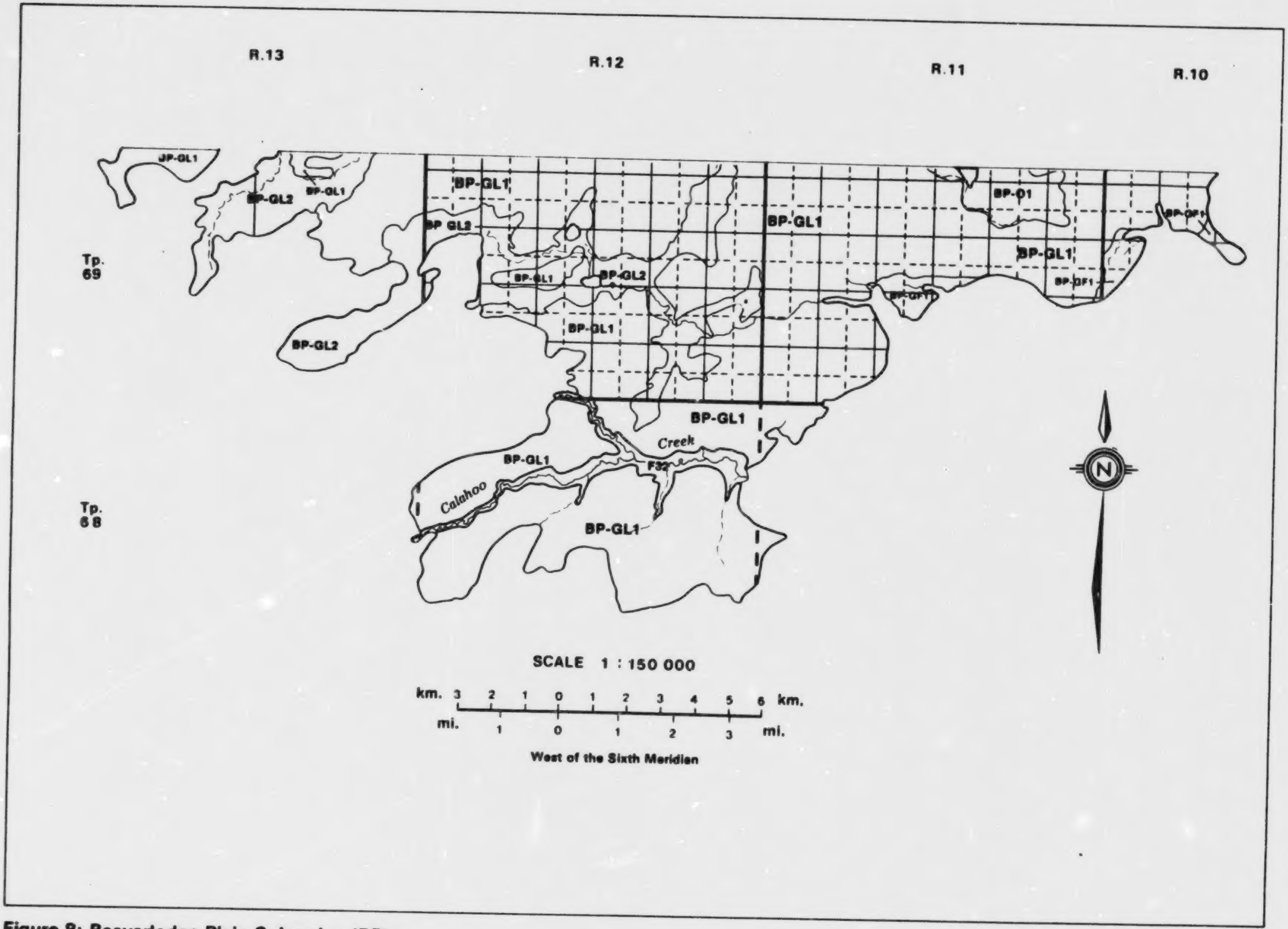
*NOTE: Bedrock across the region is gently dipping strata of the Wapiti Formation

2.1.1 Beaverlodge Plain Subregion (Ecodistrict)

This plain occurs north of the Wapiti River in the northwestern portion of the study area (Figure 8). The subregion/ecodistrict is generally underlain by gently dipping bedrock of the Wapiti Formation which slopes to the northeast. This bedrock is masked by thick glacial deposits resulting in a gently undulating to rolling glaciolacustrine plain. Elevations across much of the subregion range from 730 to 920 metres. The majority of the area is drained by tributary streams of the Wapiti River which cut across the southern portion of the subregion. The vegetation cover across the subregion reflects conditions found within the Boreal Mixedwood Ecoregion, with aspen dominating the forest stands.

The major deposits across the landscape are glaciolacustrine in nature and were initially laid down during the early stages of Glacial Lake Peace. These deposits are generally fine-textured and slightly stony as a direct result of minor readvances of Continental ice in the area. Mature seral aspen forests are dominant on these materials, with the understory vegetation reflecting the varied local drainage conditions.

Significant surficial deposits in the subregion are reflective of post glacial lake environment. Coarser textured glaciofluvial deposits occur as terraces along the upper valley portions of the Wapiti River and as thin veneers adjacent to former minor glacial meltwater channels which criss-cross the area. These deposits support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BP-GL2
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BP GL2
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BP-GL2
BP-GL1
BP-GL2
BP-GL1
BP-O1
BP-OF1
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BP-OF1
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Creek
F32
BP-GL1
Calahoo
BP-GL1
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mi. 1 0 1 2 3 mi.
West of the Sixth Meridian

Figure 8: Beaverlodge Plain Subregion (BP)

a varied forest cover depending on drainage conditions. Lodgepole pine occupies drier sites and a mixture of aspen/balsam poplar occupy other varied portions in the landscape.

Numerous organic fens occupy most of the depressional areas within the subregion. Sedge and sphagnum peats support both tamarack and black spruce communities dependent on the depth of the organic deposits.

The Beaverlodge Plain subregion is divided into four distinctive ecosection/systems consisting of glaciofluvial terraces, glaciolacustrine plain, glacial meltwater channels and organic depressions (Table 7).

A generalized description of each ecosection/system with accompanying schematic diagrams follows. In addition, two fluvial systems have been identified within the subregion (F32, F33). These systems are discussed in section 2.5 of Volume 1 of this report.

Table 7

ECOSECTIONS/SYSTEMS OF THE BEAVERLODGE PLAIN

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
BP-GF1	Inclined glaciofluvial terraces	Gravelly sand	Lodgepole pine forest
BP-GL1	Rolling glaciolacustrine plain	Glaciolacustrine clay-loam with sandy overlays	Aspen and balsam poplar forest
BP-GL2	Depressional glacial meltwater channel	Peat and glaciolacustrine sandy clay	Wet shrubland and aspen-balsam poplar forest
BP-01	Depressional glacio-lacustrine basin	Peat	Wet shrubland and open black spruce-larch forest

BP-GF1

Physical Conditions:

These level to gently inclined glaciofluvial terraces (Figure 9) bordering the Wapiti River consist of coarse-textured sand and gravel deposits. Interbedding of finer-textured materials creates small pockets of imperfect drainage. These terraces are currently being excavated commercially for gravel.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	gS	0-20	1-2	E.EB	Lodgepole pine/Blueberry/Lichen
			2	BR.GL, E.EB	Aspen/Rose/Peavine

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The low water storage capacity of coarse-textured, rapdily drained outwash deposits causes lodgepole pine forest to predominate within this ecosection. Aspen forest only occurs adjacent to creeks where coarse-textured materials have been eroded away.

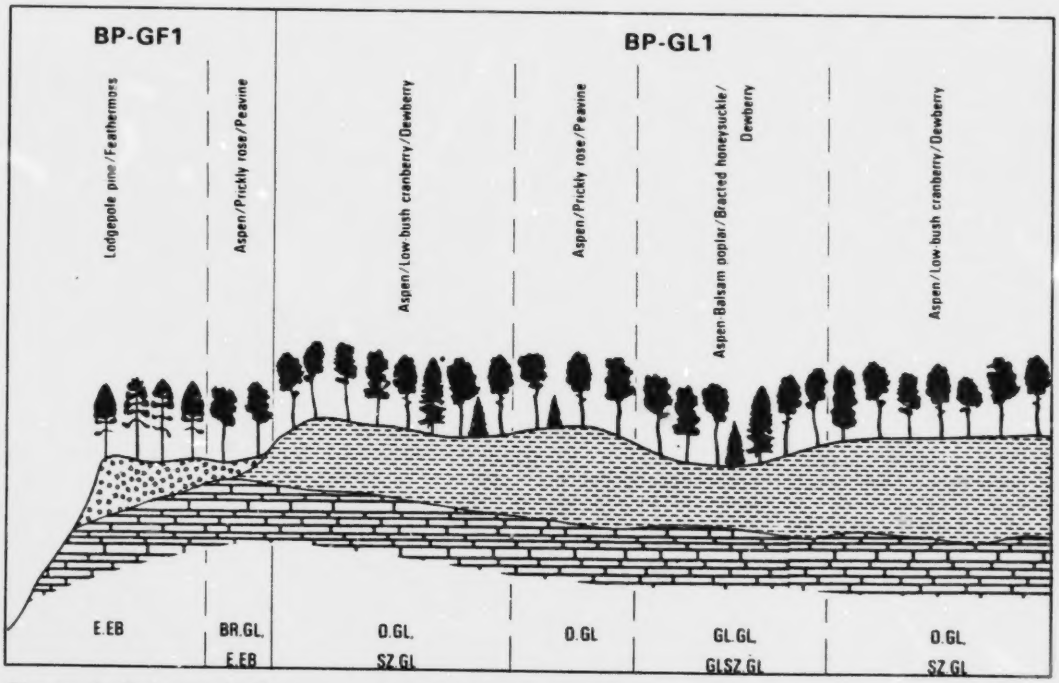

BP-GF1
BP-GL1
Lodgepole pine/Feathermoss
Aspen/Prickly rose/Peavine
Aspen/Low-bush cranberry/Dewberry
Aspen/Prickly rose/Peavine
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry
E.EB
BR.GL. E.EB
O.GL. SZ.GL
O.GL
GL.GL GLSZ.GL
O.GL. SZ.GL

Figure 9: Schematic Diagram of Ecosections BP-GF1 and BP-GL1

BP-GL1

Physical Conditions:

This very gently undulating to rolling glaciolacustrine plain (Fig. 9) occurs north of Calahoo and Sylvester Creeks. It consists mainly of moderately fine to fine-textured, slightly stony glaciolacustrine sediments. Some minor occurrences of thin glaciofluvial deposits occur adjacent to Smith Creek, indicating that this was a short-lived glacial meltwater channel. Small accumulations of sedge and sphagnum peat have developed in depressional terrain. Beach deposits occur at approximately 840 m, marking the upper level of Glacial Lake Peace.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	$\frac{\text{SCL}}{\text{CL}}$	2-9	2-3	O.GL, SL.GL	Aspen/Low-bush cranberry/Dewberry
$\frac{\text{GFvb}}{\text{GL}}$	$\frac{\text{SL}}{\text{CL}}$	2-9	4	GL.GL, GLSZ.GL, GLE.EB	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Most of the forest vegetation in this ecosection has been cleared for agricultural use. The composition of remaining forest stands is controlled by topography and drainage, with aspen forest found on well-drained knolls and a mixed aspen-balsam poplar forest on lower slopes.

Physical Conditions:

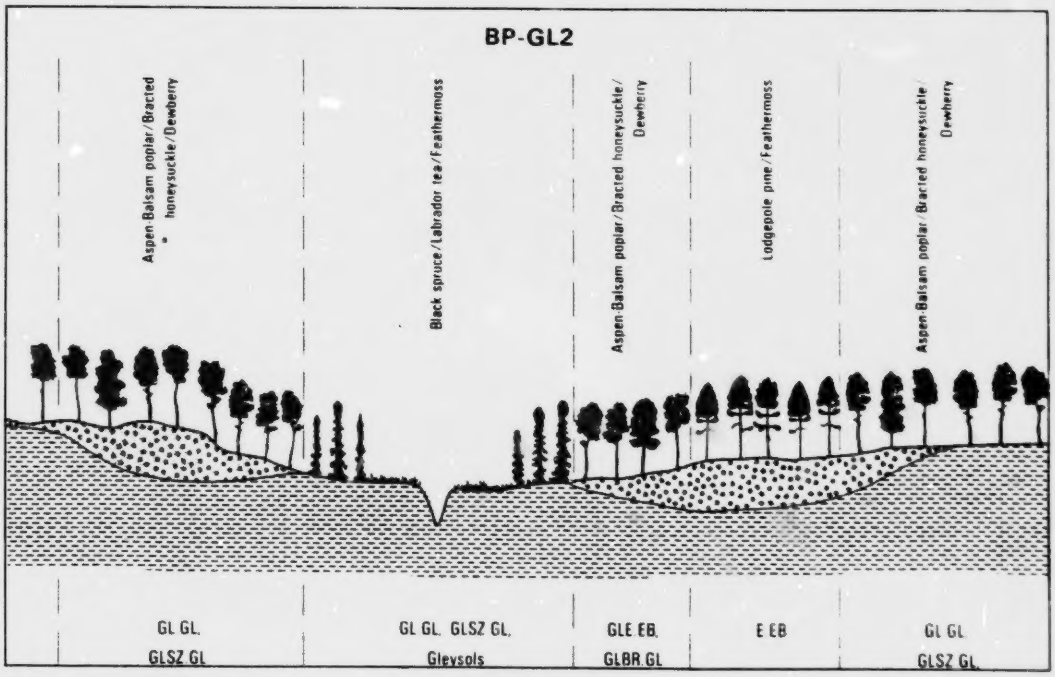
These nearly level to depressional glacial meltwater channels (Fig. 10) are now occupied by Smith and Diamond Dick Creeks. Imperfectly to poorly drained glaciolacustrine sediments are the principal surficial materials with significant amounts of organic accumulations occurring in depressional terrain. Most glaciofluvial materials were eroded by flowing meltwaters.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{SCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum
GL	SCL	0-2	4-5	GL.GL, GLSZ.GL, Gleysols	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
$\frac{\text{GFvb}}{\text{GL}}$	$\frac{\text{SL}}{\text{SCL}}$	0-2	2-4	BR.GL, E.EB, GLE.EB	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Depressional topography and poor drainage cause open fen vegetation to occur over most of this ecosection. Deciduous forest stands are confined to coarse-textured deposits on slopes, where seepage and underlying glaciolacustrine materials keep soil moisture levels high.


BP-GL2
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Lodgepole pine/Feathermoss
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
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GLSZ GL
GL GL, GLSZ GL,
Gleysols
GLE EB,
GLBR GL
E EB
GL GL
GLSZ GL

Figure 10: Schematic Diagram of Ecosection BP-GL2

Physical Conditions:

This system is a nearly level to depressional fen (Fig. 11). Organic accumulations derived from sedge and sphagnum peats are underlain at depth by fine-textured glaciolacustrine sediments. The slow permeability of glaciolacustrine materials has led to perched water tables and the development of floating bogs and small lakes.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum Black spruce/Labrador tea/Feathermoss
O	Mesic	0-2	6	Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

A mixture of shrubby and treed fen vegetation occurs on this poorly drained lowland surrounding Twin Lakes. Lack of coarse-textured overlays with deciduous forest cover distinguishes it from BP-GL2.

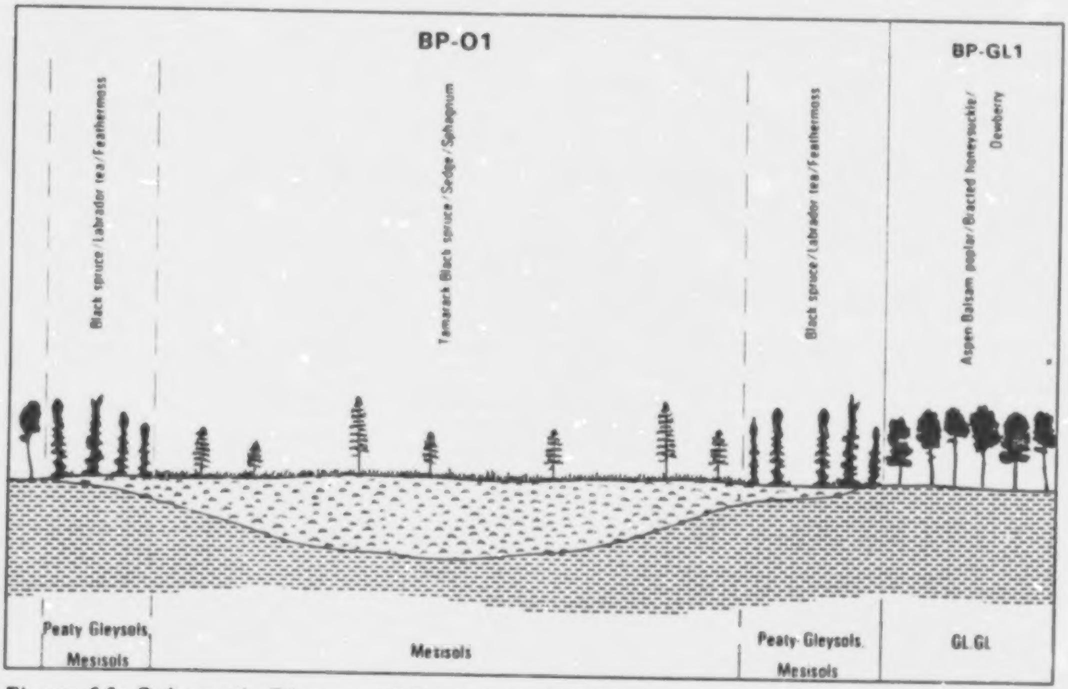

BP-O1
BP-GL1
Black spruce/Labrador tea/Feathermoss
Tamarack Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Aspen Balsam poplar/Bracted honeysuckle/Dewberry
Peaty Gleysols, Mesisols
Mesisols
Peaty Gleysols, Mesisols
GL.GL

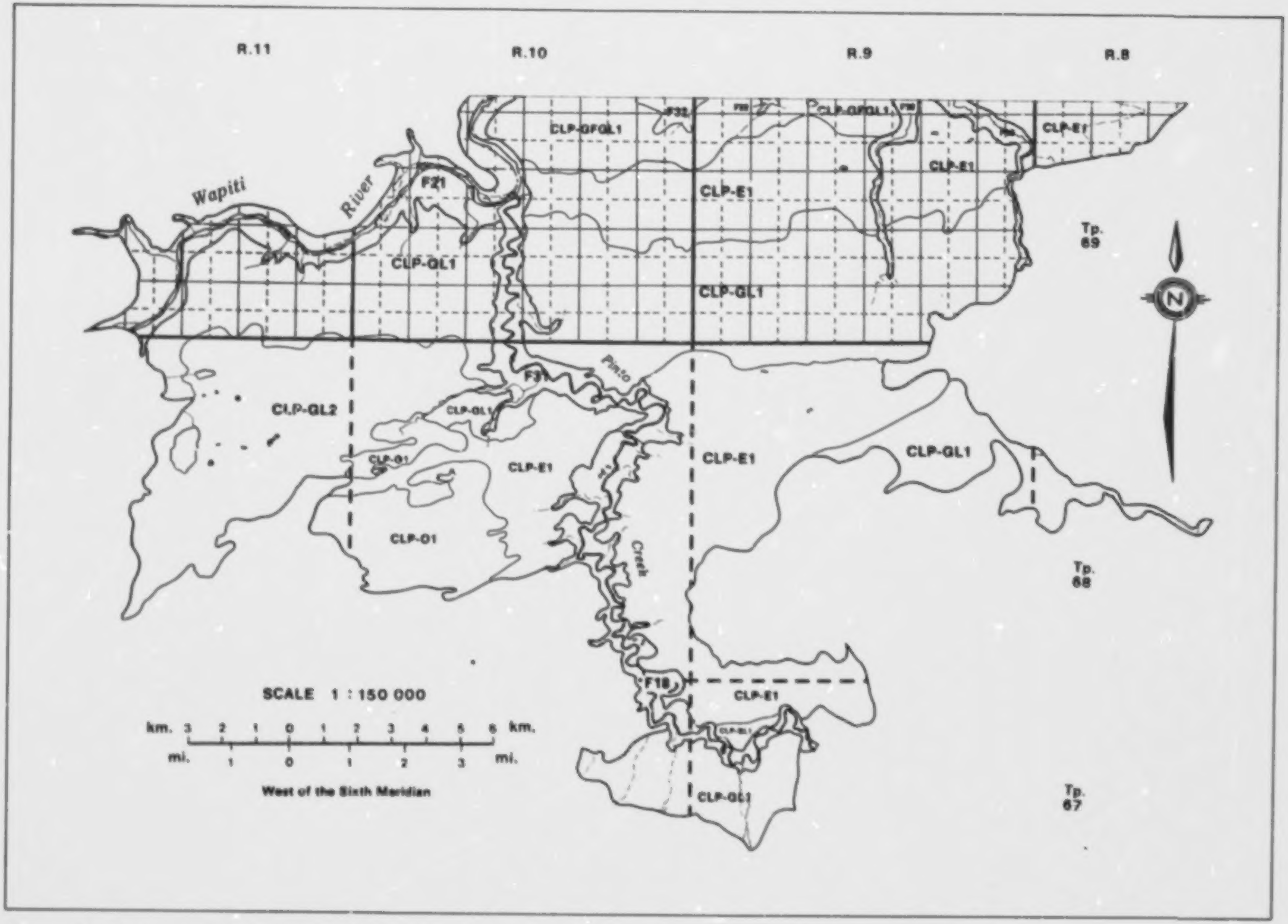
Figure 11: Schematic Diagram of Ecosection BP-O1

2.1.2 Clairmont Plain Subregion (Ecodistrict)

The Clairmont Plain occupies a portion of the landscape east of the Wapiti River (Figure 12). Bedrock of the Wapiti Formation underlies this subregion/ecodistrict but is masked by thick glacial deposits except for minor local exposures within the Pinto Creek valley. Elevations range from 610 m to 820 m across the gently undulating to depressional glaciolacustrine plain which makes up the landscape. Vegetation reflects the conditions found within the Boreal Mixedwood Ecoregion, however, the high variability in surficial deposits produces a complex vegetation mosaic.

The dominantly fine-textured glaciolacustrine deposits originated during the early stages of Glacial Lake Peace and are commonly overlain by glaciofluvial and eolian materials as a result of delta building processes. These coarse-textured overlays combined with underlying fine-textured materials results in varied drainage conditions across the subregion. This is reflected in the vegetation cover and limits the occurrence of modal sites. Vegetation found on these glaciolacustrine materials varies from mature seral aspen to black spruce dependent on soil moisture conditions.

In addition to overlays, more extensive deposits of glaciofluvial and eolian materials are found throughout the subregion. Glaciofluvial materials in the form of terrace and sheet wash deposits are found along the major streams. Some of these deposits have been reworked by eolian processes into extensive dune fields. Vegetation on these coarse textured and better drained sites ranges from a mixture of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River
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F32
F18
Pinto
Creek
CLP-GFGL1
CLP-E1
CLP-GL1
CLP-GL2
CLP-O1
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West of the Sixth Meridian

Figure 12: Clairmont Plain Subregion (CP)

seral aspen/balsam poplar forest to lodgepole pine stands.

As with a significant portion of most of the subregions within the Wapiti Plains, organic accumulations are generally found in association with other surficial materials. Occupying depressional locations, these sites support tamarack and black spruce communities.

The Clairmont Plain subregion is divided into five ecosection/systems; dune field, glaciofluvial terrace, glaciolacustrine plain, depresional glaciolacustrine plain, and organic depressions (Table 8). Descriptions and accompanying schematic diagrams of each ecosection/system follows.

The subregion has also been identified as having four fluvial systems (F18, F21, F31, F32) which cross the landscape. Their characteristics are discussed in section 2.5 of Volume 1.

Table 8

ECOSECTIONS/SYSTEMS OF THE CLAIRMONT PLAIN

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
CLP-E1	Ridged dune plain	Eolian sand and peat	Aspen and lodgepole pine forest, black spruce muskeg
CLP-GFGL1	Eroded glaciofluvial terrace	Loamy glaciofluvial sand and peat	Lodgepole pine and aspen forest, sedge meadows
CLP-GL1	Undulating glaciolacustrine plain	Glaciolacustrine clay and peat	Aspen and white spruce forest, black spruce muskeg
CLP-GL2	Undulating glaciolacustrine plain	Glaciolacustrine clay with sandy overlays and peat	Aspen, lodgepole pine and open black spruce forest
CLP-O1	Depressional glaciolacustrine basin	Peat	Sedge and shrub-dominated muskeg

Physical Conditions:

This system (Fig.13) is located south of the Wapiti River and is dissected by both Iroquois and Pinto Creeks. Surficial materials are dominated by eolian sands which occur as either parabolic and longitudinal dunes or as eolian veneers and blankets overlying finer-textured glaciolacustrine sediments. Organic accumulations are interspersed between sand dunes.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
Evb/GL	S-LS/CL	0-2	2-3 3-4	E.EB, BR.GL BR.GL, GLBR.GL	Aspen/Rose/Pea vine Aspen/Low-bush cranberry/Dewberry
E	S	0-9	1	E.EB, E.DYB	Lodgepole pine/Blueberry/Lichen
Ovb/GL	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The thickness and conformation of sand deposits controls the patterns of soil moisture and vegetation. Large dune fields have lodgepole pine forest on rapdily drained dune crests and slopes, with shrubby black spruce muskeg in the poorly drained areas between dunes.

Thin sheet sand deposits are not as dry as dunes because underlying clay deposits are near the surface. These deposits support a mixture of aspen and balsam poplar communities.

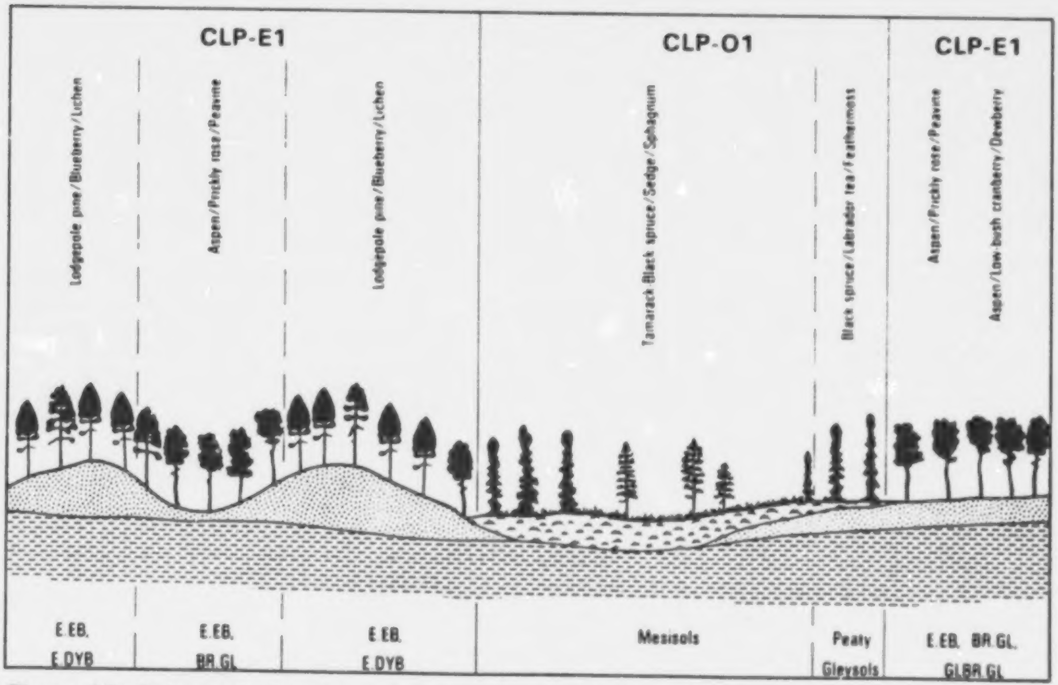

CLP-E1
CLP-O1
CLP-E1
Lodgepole pine/Blueberry/Lichen
Aspen/Prickly rose/Peavine
Lodgepole pine/Blueberry/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Aspen/Prickly rose/Peavine
Aspen/Low-bush cranberry/Dewberry
E.EB. E.DYB
E.EB. BR.GL
E.EB. E.DYB
Mesisols
Peaty Gleysols
E.EB. BR.GL. GLBR.GL

Figure 13: Schematic Diagram of Ecosections CLP-E1 and CLP-O1

CLP-GFGL1

Physical Conditions:

This is a nearly level, highly eroded glaciofluvial terrace bordering the south side of the Wapiti River (Fig. 14). Surficial materials include coarse-textured glaciofluvial sands and gravels in association with finer-textured glaciolacustrine sediments. (Glaciolacustrine sediments are the result of erosion following deposition by glacial meltwater streams which deposited these finer textured sediments in oxbow-like features). Organic veneers commonly overlie glaciolacustrine deposits.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF, $\frac{\mathrm{GFvb}}{\mathrm{GL}}$	kLS, $\frac{\mathrm{kLS}}{\mathrm{CL}}$	0-2	1 2	E.EB, BR.GL, PZ.GL	Lodgepole pine/Blueberry/Lichen Aspen/Rose/Pea vine
$\frac{\mathrm{Ov}}{\mathrm{GL}}$	$\frac{\mathrm{Mesic}}{\mathrm{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The vegetation pattern closely reflects the pattern of deposition of glaciofluvial sands. Lodgepole pine forest occurs in a braided pattern on thick, well drained sand deposits, while poorly drained channels support sedge-dominated wetlands.

Moisture conditions are less extreme on sloping sheet sand deposits, and aspen forest is characteristic.

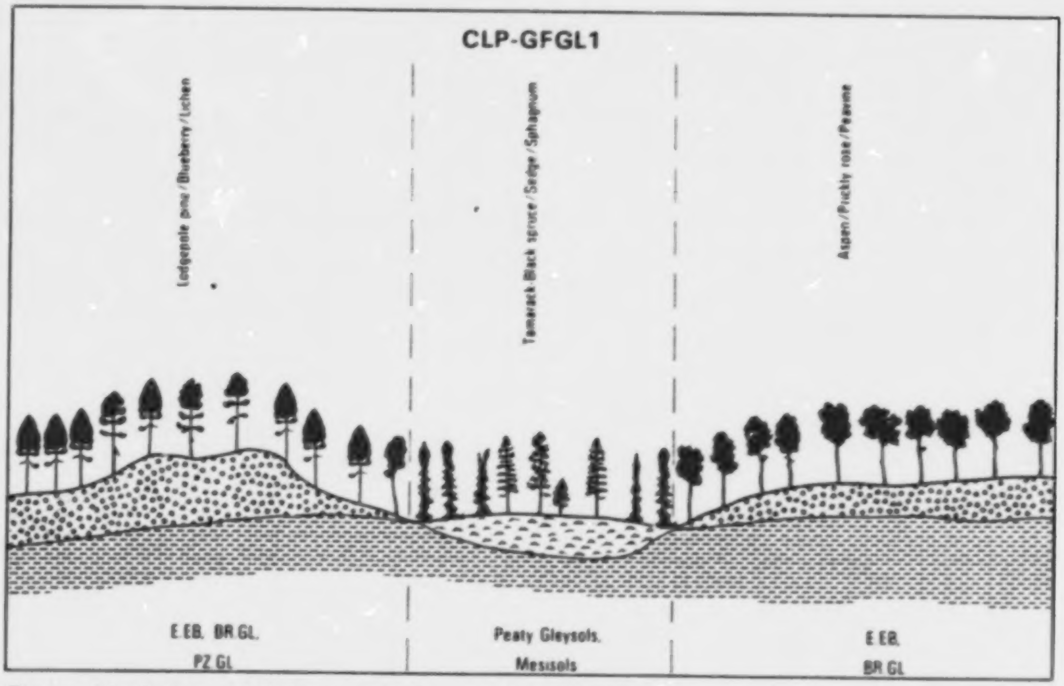

CLP-GFGL1
Lodgepole pine/Blueberry/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Prickly rose/Peavine
E.EB, BR.GL,
PZ.GL
Peaty Gleysols,
Mesisols
E.EB,
BR.GL

Figure 14: Schematic Diagram of Ecosection CLP-GFGL1

CLP-GL1

Physical Conditions:

This nearly level to gently undulating glaciolacustrine plain (Fig. 15) is dissected by Pinto Creek and occurs immediately south of its confluence with the Wapiti River. Surficial materials consist of moderately fine to fine-textured glaciolacustrine sediments. Organic accumulations occur locally in depressional terrain and thin glaciofluvial veneers are common west of Iroquois Creek.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL, $\frac{\text{GFv}}{\text{GL}}$	$\frac{\text{SL}}{\text{CL}}$	2-5	2-3	SZ.GL, O.GL	Aspen/Low-bush cranberry/Dewberry-Balsam poplar-Aspen/Bracted honeysuckle/Dewberry
GL	CL	0-5	4	GLSZ.GL, GL.GL	White spruce/Bracted honeysuckle/Dewberry
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The pattern of vegetation on uplands reflects the prevalence of seepage, with aspen forest on well-drained sites and a mixed aspen-balsam poplar forest in seepage tracks. Poorly drained lowlands support a mixture of deciduous shrubland and black spruce stands.

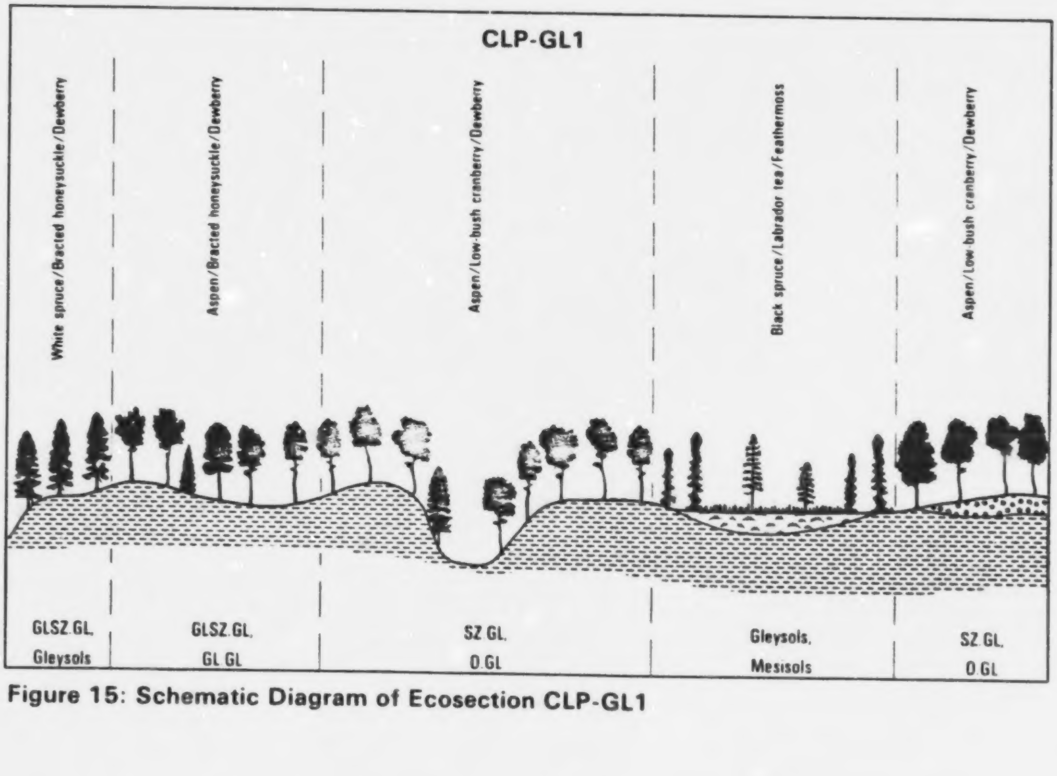

CLP-GL1
White spruce/Bracted honeysuckle/Dewberry
Aspen/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Dewberry
GLSZ.GL,
Gleysols
GLSZ.GL,
GL.GL
SZ.GL,
O.GL
Gleysols,
Mesisols
SZ.GL,
O.GL

Figure 15: Schematic Diagram of Ecosection CLP-GL1

Physical Conditions:

This nearly level to depressional glaciolacustrine plain (Fig. 16) occurs between the Wapiti River and Pinto Creek. Imperfectly to poorly drained glaciolacustrine sediments are overlain by ridged glaciofluvial and eolain deposits of variable thicknesses. Organic accumulations occur between the ridges.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	CL/C	0-2	4-5	Gleysols	Black spruce/Labrador tea/Feathermoss
Eb/GFb GL	S CL/C	0-15	1-2	E.EB, BR.GL	Lodgepole pine/Blueberry/Lichen Aspen/Rose/Pea vine-Balsam poplar
Ev/GFv GL	S CL/C	0-2	4	GLBR.GL, GL.GL	Aspen/Bracted honeysuckle/Dewberry
Ovb GL	Mesic CL/C	0-2	6	Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

A complex vegetation pattern is produced by variation in the depth of coarse-textured overlays. Thick, rapidly drained sand deposits in the eastern part of the ecosection support lodgepole pine forest, while apsen forest predominates on thinner deposits in the west.

Sedge meadows and open black spruce forests are found on poorly drained lowlands.

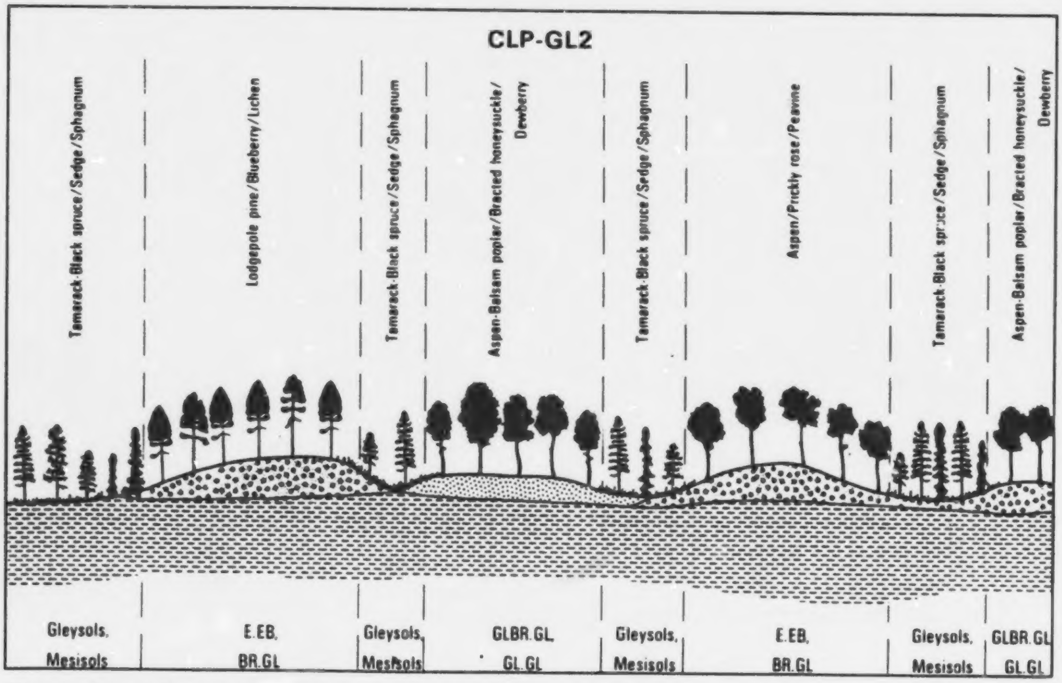

CLP-GL2
Tamarack-Black spruce/Sedge/Sphagnum
Lodgepole pine/Blueberry/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Prickly rose/Peavine
Tamarack-Black spruce/Sedge/Sphagnum
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
GLBR.GL, GL.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
GLBR.GL GL.GL

Figure 16: Schematic Diagram of Ecosection CLP-GL2

CLP-01

Physical Conditions:

These low-lying depressional areas (Fig. 13) consist of bogs which occur west of Pinto Creek and south of the Wapiti River. Organic accumulations are derived from sedge and sphagnum peats and are underlain by fine-textured glaciolacustrine sediments which restrict groundwater percolation. These accumulations may exceed 2 m in depth.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
O, $\frac{Ovb}{GL}$	$\frac{Mesic}{CL}$	0-2	5-6	Mesisols, peaty Gleysols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Excessive soil moisture restricts development of vegetation to a mixture of sedge and shrub-dominated wetlands in which tamarack is the most common tree species. The few remaining dunes support lodgepole pine forest.

2.1.3 Isoegun Plain Subregion (Ecodistrict)

Found within the central portion of the Wapiti Plains Region, the Isoegun Plain (Figure 17) consists of an extensive gently rolling lacustrine plain sloping to the north-northeast. Bedrock strata of the Wapiti Formation underlies the sloping landscape but is masked by thick glacial materials which give the subregion/ecodistrict a relief of approximately 175-200 metres. The subregion lies entirely within the Boreal Mixedwood Ecoregion with aspen forest dominating the landscape.

Although glaciolacustrine sediments dominate much of the landscape, overlays of glaciofluvial sediments are common. This is a direct result of extensive delta building processes during the evolution of Glacial Lake Peace. These coarse-textured overlays combined with fine-textured underlying glaciolacustrine materials have given rise to varied drainage conditions. Vegetation over most of this landscape consists of aspen forest often in association with balsam poplar.

The variety of materials found around the margin of the subregion are indicative of a complex glacial history. Sediments associated with meltwater channels are common, along with remnant deltaic sands which have been reworked by eolian processes. Most of these deposits support a varied association of aspen/balsam poplar which reflects the influence of underlying fine-textured materials. Where the coarse-textured glaciofluvial and eolian materials are deeper, vegetation often consists of lodgepole pine forest.

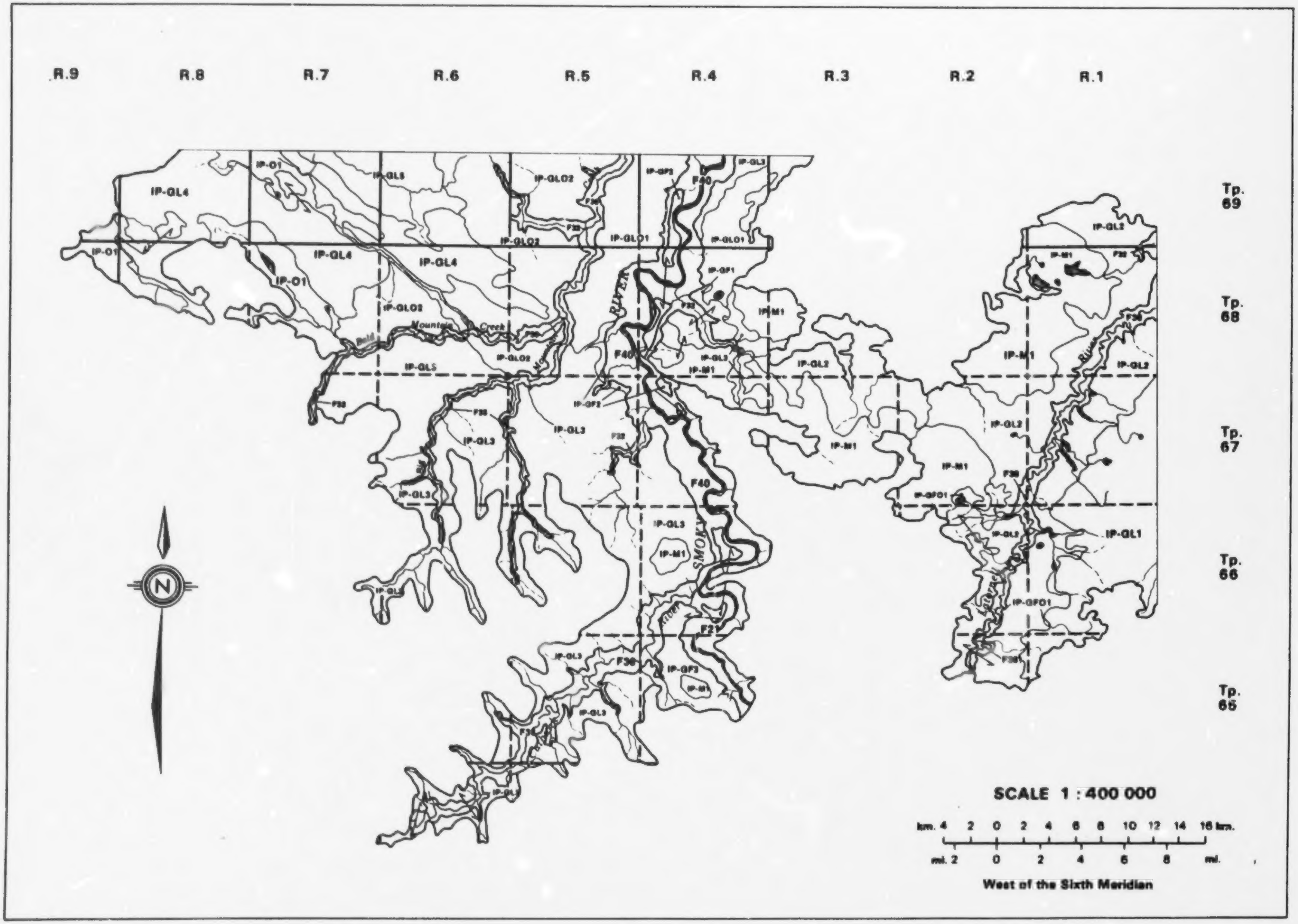

R.9
R.8
R.7
R.6
R.5
R.4
R.3
R.2
R.1
Tp. 69
Tp. 68
Tp. 67
Tp. 66
Tp. 65
IP-GL4
IP-O1
IP-GL5
IP-GLO2
IP-GLO1
IP-GP2
IP-GP1
IP-GL3
IP-M1
IP-GL2
IP-GL1
IP-GPO1
IP-GP3
F40
F38
F32
F21
Bald Mountain Creek
SMOKY
RIVER
N
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 17: Iosegun Plain Subregion (IP)

Till deposits occur locally around the southern edge of the former lake basin. These deposits are often covered by thin glaciofluvial, eolian and glaciolacustrine sediments. Associated shoreline features are common in these areas and indicate fluctuations in lake levels during its brief history. Vegetation in these areas tends to be complex and consists of aspen/balsam poplar often in association with white/black spruce.

Organic deposits are common throughout the subregion and are associated with all surficial materials. Vegetation is commonly black spruce and tamarack.

The Isoegun Plains subregion is divided into thirteen ecosection/systems (Table 9) which reflect the complex nature of landscape found within this portion of the Wapiti Plains region. Six fluvial systems cross the subregion (F21, F32, F33, F36, F38, F40). They are identified and discussed in section 2.5, Volume 1 of this report.

Table 9

ECOSECTIONS/SYSTEMS OF THE ISOEGUN PLAIN

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
IP-GF1	Level glaciofluvial terraces	Glaciofluvial sand and silt, and peat	Aspen and balsam poplar forest, black spruce muskeg
IP-GF2	Undulating glaciofluvial terraces	Glaciofluvial sand and gravel	Aspen forest
IP-GF3	Undulating outwash plain	Glaciofluvial silt and sand, peat	Aspen-balsam poplar, lodgepole pine and open black spruce forest
IP-GFO1	Gently, inclined glaciofluvial delta	Glaciofluvial silt and sand, peat	Aspen and balsam poplar forest, black spruce and larch muskeg
IP-GL1	Rolling glaciolacustrine plain	Glaciolacustrine clay and peat	Aspen-balsam poplar and open black spruce forest
IP-GL2	Gently undulating glaciolacustrine plain	Glaciolacustrine clay, with sand and peat overlays	Aspen, balsam poplar, white spruce and open black spruce forest
IP-GL3	Undulating glaciolacustrine plain	Glaciolacustrine silt and clay	Aspen, balsam poplar and white spruce forest
IP-GL4	Gently inclined bedrock ridge	Glaciolacustrine silt and clay	Aspen and balsam poplar forest, black spruce muskeg
IP-GL5	Level glaciolacustrine plain	Glaciolacustrine clay and and eolian silt, peat	Aspen and balsam poplar forest, shrubby muskeg
IP-GLO1	Undulating glaciofluvial delta	Glaciolacustrine clay overlain by sand and silt, and peat	Aspen and lodgepole pine forest, sedge and shrub muskeg
IP-GLO2	Level glaciolacustrine plain	Glaciolacustrine clay overlain by silt, and peat	Aspen, balsam poplar and white spruce forest, shrubby and black spruce muskeg
IP-M1	Rolling ridges	Silt and sand over sandy clay till	Aspen and balsam poplar forest
IP-O1	Glacial meltwater channel	Peat	Sedge meadows, shrubland and open black spruce-larch forest

IP-GF1

Physical Conditions:

This is a complex of nearly level glaciofluvial terraces which are located 90-120 m above the valley floor (Fig. 18). Materials consist of interbedded glaciofluvial sands and silts, which are underlain by fine-textured till or glaciolacustrine sediments. Imperfectly to poorly drained conditions predominate because of fine-textured underlying materials combined with groundwater discharge from adjacent uplands. These organic deposits have accumulated in poorly drained terrain.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	S-SiCL	0-2	4	GLE.EB	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
$\frac{\text{Ov}}{\text{GF}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

A mixed forest of aspen and balsam poplar covers must of this ecosection. The high incidence of balsam poplar reflects an abundance of soil moisture because of seepage and underlying fine-textured materials that impede percolation.

A few small ponds that have infilled with peat support sedge meadows and black spruce stands.

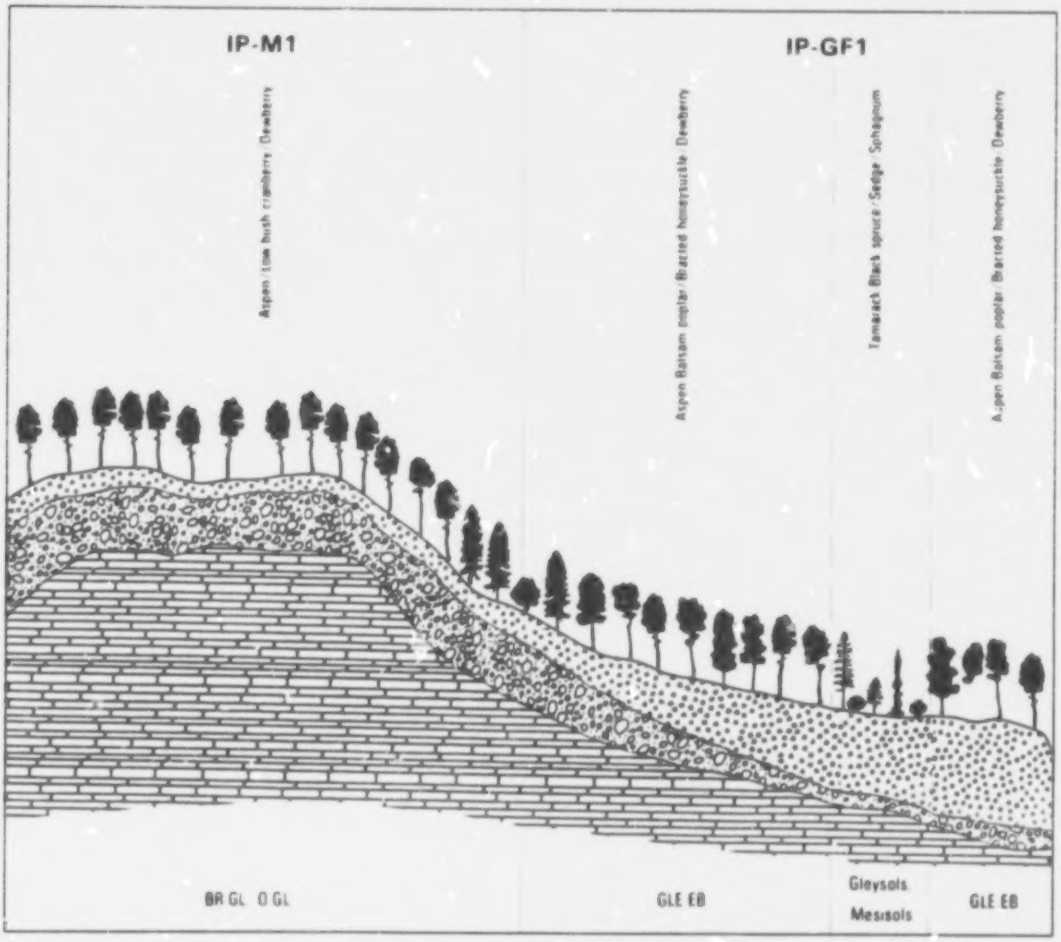

IP-M1
IP-GF1
Aspen/Low bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
BR.GL O.GL
GLE.EB
Gleysols
Mesisols
GLE.EB

Figure 18. Schematic Diagram of Ecosections IP-GF1 and IP-M1

IP-GF2

Physical Conditions:

This is a series of level to gently undulating glaciofluvial terraces located 15-120 m above the present day floodplain of the Smoky River (Fig. 19). Materials consist of interbedded sand and gravel deposits of variable thickness. These deposits are commonly overlain by a thin (2-10 cm) veneer of glaciolacustrine sediments. This sequence of surficial deposits indicates that there were several episodes of meltwater dishcharge. Gravel is currently being extracted from the northernmost of these terraces.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF		0-2	2-4	O.GL, GL.GL	Aspen/hazel/wild sarsaparilla
GLv/GF	CL/S	0-2	2	O.GL	Aspen/Low-bush cranberry/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions:

These terraces are covered with aspen forest, the lower incidence of balsam poplar compared to IP-GL1 is a reflection of the greater depth of coarse sand and gravel and lack of interbedded finer materials.

A few relic oxbows support fen vegetation dominated by sedges and willows.

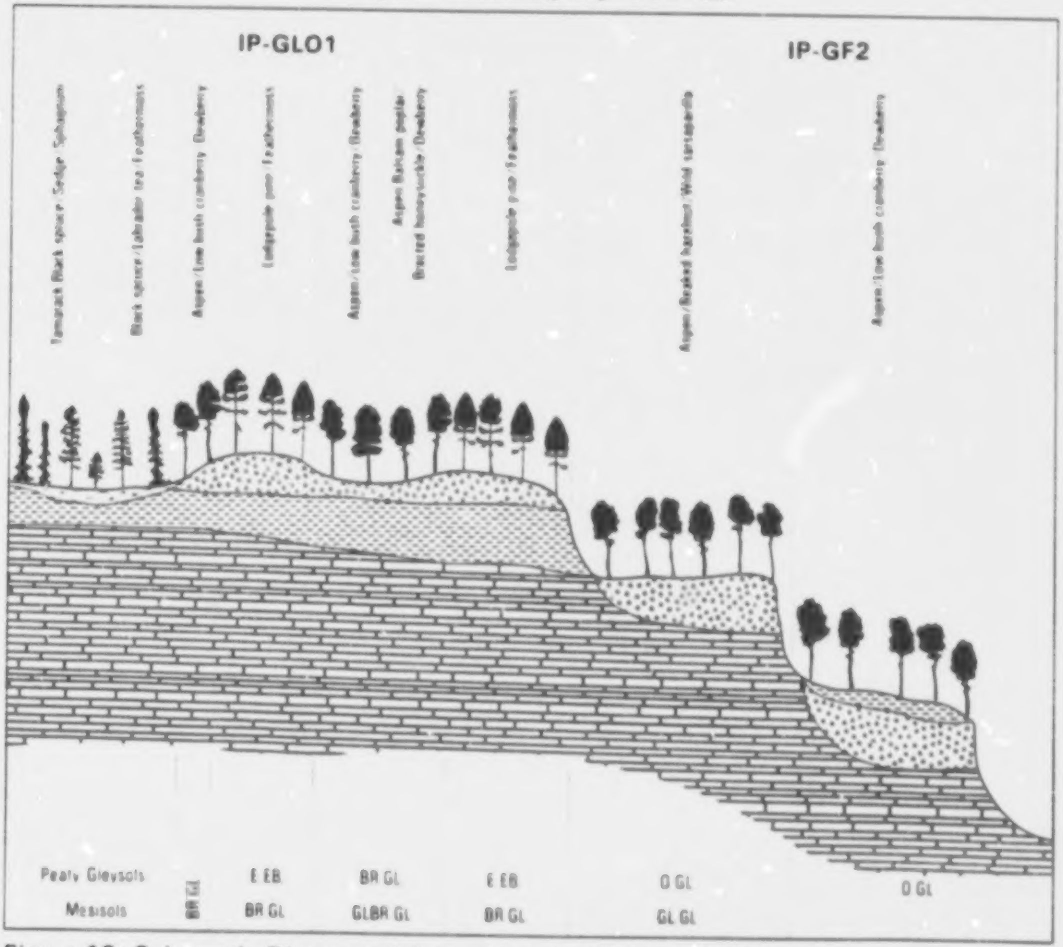

IP-GLO1
IP-GF2
Tamarack/Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Dewberry
Lodgepole pine/Feathermoss
Aspen/Low-bush cranberry/Dewberry
Aspen/Balsam poplar/
Bracted honeysuckle/Dewberry
Lodgepole pine/Feathermoss
Aspen/Beaked hazelnut/Wild sarsaparilla
Aspen/Low-bush cranberry/Dewberry
Peaty Gleysols
Mesisols
BR GL
E EB
BR GL
BR GL
GLBR GL
E EB
BR GL
O GL
GL GL
O GL

Figure 19: Schematic Diagram of Ecosections IP-GF2 and IP-GLO1

IP-GF3

Physical Conditions:

This level to gently undulating outwash plain is located near the confluence of the Smoky and Cutbank Rivers (Fig. 20). Thick, medium to coarse-textured glacioflulvial materials overlie bedrock which is very prone to slumping. Thin accumulations of sphagnum peat overlie these deposits adjacent to CB-M3 where seepage is pronounced. Drainage is highly variable with well-drained conditions prevailing in the north.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	Si-S	2-6	2-3	E.EB	Aspen/Low-bush cranberry/Dewberry, Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
			2	E.EB	Lodgepole pine/Feathermoss
			4-5	GLE.EB, Gleysols	Black spruce-Lodgepole pine/Feathermoss
$\frac{\text{Ovb}}{\text{GF}}$	$\frac{\text{Mesic}}{\text{SiL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Feathermoss/Tamarack- Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The vegetation pattern is influenced by variation in the thickness of glaciofluvial sands and subtle differences in topography. Mixed aspen-balsam poplar forest occurs on the nearly level northern portion where sand deposits are thin. In the southern portion there is a gradient that reflects increasing moisture availability, with lodgepole pine forest on upper slopes, pine-black spruce forest on lower slopes and a mixture of open and closed black spruce forest on poorly drained lowlands.

Physical Conditions:

This is a nearly level to gently inclined glaciofluvial delta that has been dissected by the Latornell River (Fig. 21). Surficial materials consist of glaciofluvial silts and sands which were deposited over finer-textured glaciolacustrine sediments. Extensive accumulations of poorly drained sedge and sphagnum peat have developed in depressional topography.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	Si-S	5-9	2-3	E.EB, BR.GL	Aspen/Low-bush cranberry/Dewberry
$\frac{\text{GFvb}}{\text{GL}}$	$\frac{\text{Si}}{\text{CL}}$	0-5	3-4	BR.GL, O.GL, GLBR.GL, GL.GL	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry
O	Mesic	0-2	6	Mesisols	Larch/Black spruce/Sedge/Sphagnum
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss Larch-Black spruce/Sedge/sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

A sharply defined vegetation pattern is produced by abrupt changes in soil drainage. Relatively well-drained islands of glaciofluvial sand support a mixture of aspen and aspen-balsam poplar forest. Poorly drained peats are characterized by open black spruce and larch communities.

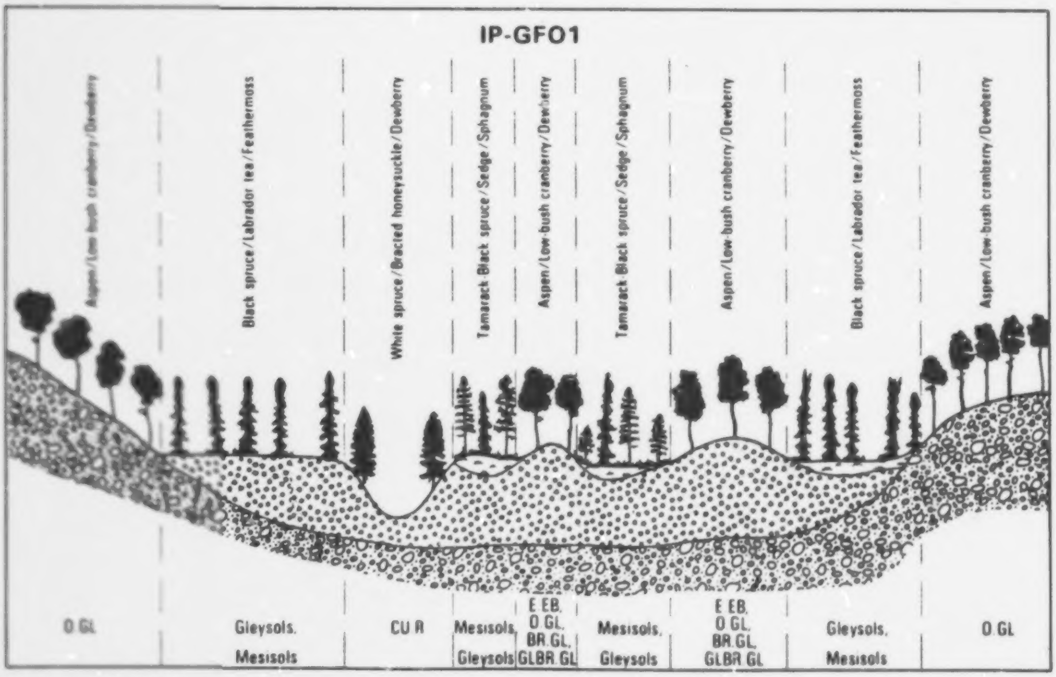

IP-GFO1
Aspen/Low-bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
White spruce/Bracted honeysuckle/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Low-bush cranberry/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Low-bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Dewberry
O.GL
Gleysols, Mesisols
CU.R
Mesisols, Gleysols
E.EB, O.GL, BR.GL, GLBR.GL
Mesisols, Gleysols
E.EB, O.GL, BR.GL, GLBR.GL
Gleysols, Mesisols
O.GL

Figure 21: Schematic Diagram of Ecosection IP-GFO1

IP-GL1

Physical Conditions:

This system represents part of the shoreline of Glacial Lake Peace which abuts the till-covered uplands of the Simonette Benchlands (Fig. 22). The predominant surficial materials are moderately fine-textured glaciolacustrine sediments which overlie undulating to gently rolling till deposits. Coarse-textured beach deposits occur locally along the margins of the former lake. In addition, glaciofluvial veneers often cover glaciolacustrine sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	CL	0-2	4	GL.GL, GLSZ.GL	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry
GL, $\frac{\text{GLvb}}{\text{M}}$, M	$\frac{\text{SiC}}{\text{CL}}$	2-6	2-3	O.GL SZ.GL	Aspen/Low-bush cranberry/Dewberry
$\frac{\text{Ovb}}{\text{M}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Sphagnum Larch/Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Groundwater discharge from the adjacent Simonette Benchlands has a major influence on the vegetation pattern. Imperfectly drained seepage tracks are very common and support a mixed aspen-balsam poplar forest. White spruce stands are often found in these environments on lower slopes, while pure aspen forest is confined to well-drained sites on upper slopes.

Sedge and black spruce dominated wetlands are not common because prevailing slopes limit ponding of groundwater.

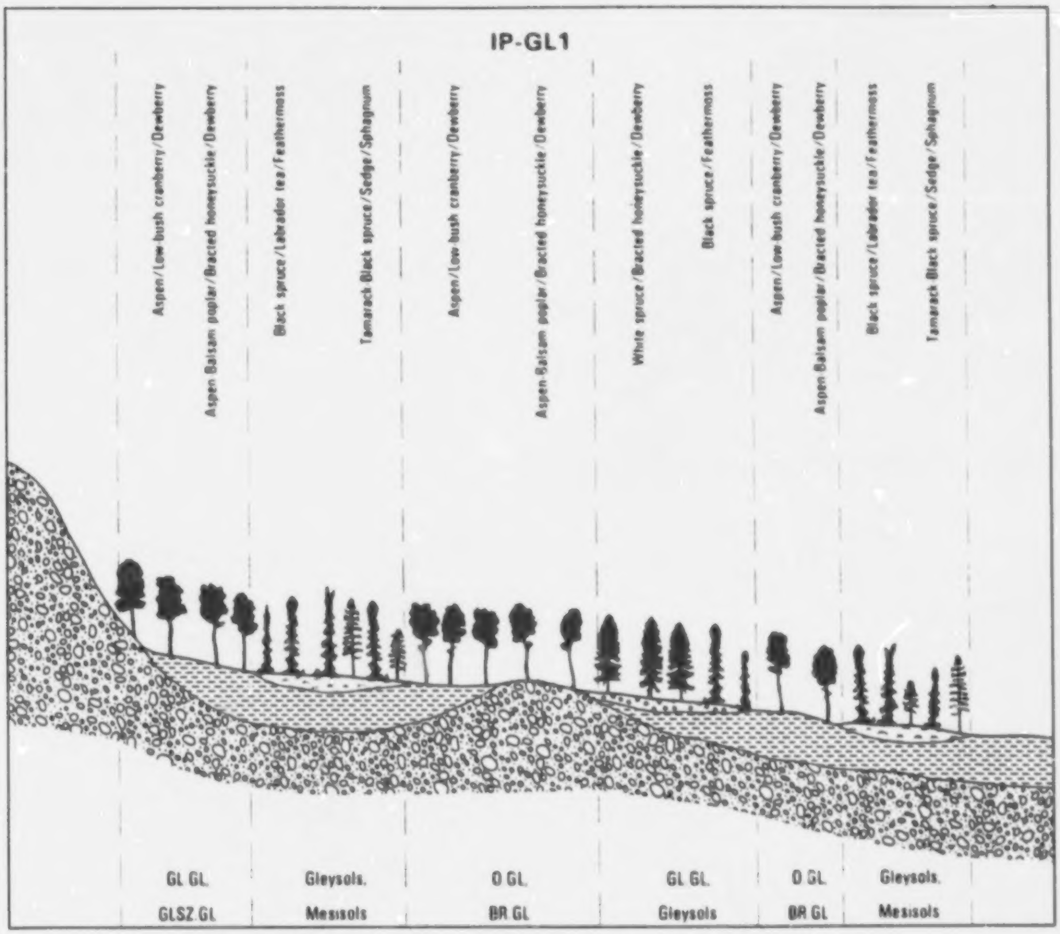

IP-GL1
Aspen/Low-bush cranberry/Dewberry
Aspen Balsam poplar/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Tamarack Black spruce/Sedge/Sphagnum
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
White spruce/Bracted honeysuckle/Dewberry
Black spruce/Feathermoss
Aspen/Low-bush cranberry/Dewberry
Aspen Balsam poplar/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Tamarack Black spruce/Sedge/Sphagnum
GL GL.
GLSZ GL
Gleysols.
Mesisols
O GL.
BR GL
GL GL.
Gleysols
O GL.
BR GL
Gleysols.
Mesisols

Figure 22: Schematic Diagram of Ecosection IP-GL1

Physical Conditions:

This is a nearly level to gently undulating glaciolacustrine plain (Fig. 23) on which fine to moderately fine-textured glaciolacustrine sediments are overlain by discontinuous veneers of glaciofluvial and eolian materials. Accumulations of sedge and sphagnum peat occur locally and account for less than 15% of the total area. Small ponds occur where isolated deposits of ablation till were left by ice blocks separated from the main ice front.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	SiCL/CL	2-6	3	O.GL	Aspen/Low-bush cranberry/Dewberry
			4-5	GL.GL, GLSZ.GL, Gleysols	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry White spruce/Bracted honeysuckle/Dewberry
GFv/GL or Ev/GL	SL/Si/CL	2-6	3-4	O.GL, GL.GL, GLSZ.GL	Aspen/Low-bush cranberry/Dewberry Aspen/Balsam poplar/Bracted honeysuckle/Dewberry
Ovb/GL	Mesic/CL	0-2	5-6	Mesisols	Black spruce/Labrador tea/Feathermoss Larch/Black Spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The presence of coarse, sandy overlays creates wide variation in soil moisture conditions. Elevated sandy sites suport dry aspen stands, while a mixture of aspen forest, aspen-balsam poplar forest and white spruce stands is found on lower slopes where more moisture is available.

The small wetlands that have developed in groundwater discharge areas and where ponds have been infilled with peat support open black spruce and larch communities.

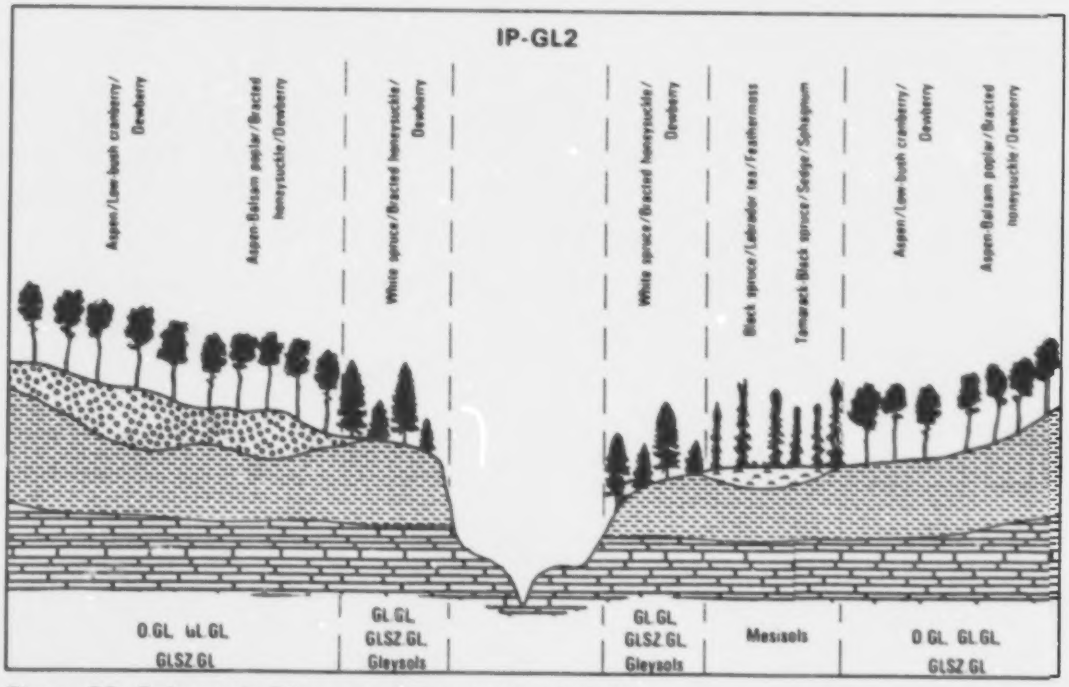

IP-GL2
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
White spruce/Bracted honeysuckle/Dewberry
White spruce/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
O.GL GL.GL GLSZ.GL
GL.GL GLSZ.GL Gleysols
GL.GL GLSZ.GL Gleysols
Mesisols
O.GL GL.GL GLSZ.GL

Figure 23: Schematic Diagram of Ecosection IP-GL2

IP-GL3

Physical Conditions:

The predominant surficial materials found within this extensive undulating plain consist of moderately fine to fine-textured glaciolacustrine silts and clays (Fig. 24). These sediments are overlain by isolated deposits of glaciofluvial outwash and ice-rafted till deposits. Groundwater seepage is not as common here as elsewhere in the Isoegun Plain, perhaps because of long slopes.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL, GFv/GL	Si/CL	0-6	3	O.GL, SZ.GL	Aspen/Low-bush cranberry/Dewberry
			4	GL.GL, GLSZ.GL	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry
			4-5	GLSZ.GL, Gleysols	White spruce/Bracted honeysuckle/Dewberry
Mv/GL	SiCL/CL	0-2	3	O.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Gradual, topographically induced changes in soil drainage are reflected in the patterns of aspen forest on upper slopes and aspen-balsam poplar forest on lower slopes and depressions. Segregation of these two types is not as clearcut as in other ecosections, because seepage patterns are not as pronounced. A few mature white spruce stands occur within the deciduous forest, but most have been harvested for lumber.

A mixture of aspen and lodgepole pine forest is found on till outcrops that become more common toward the south.

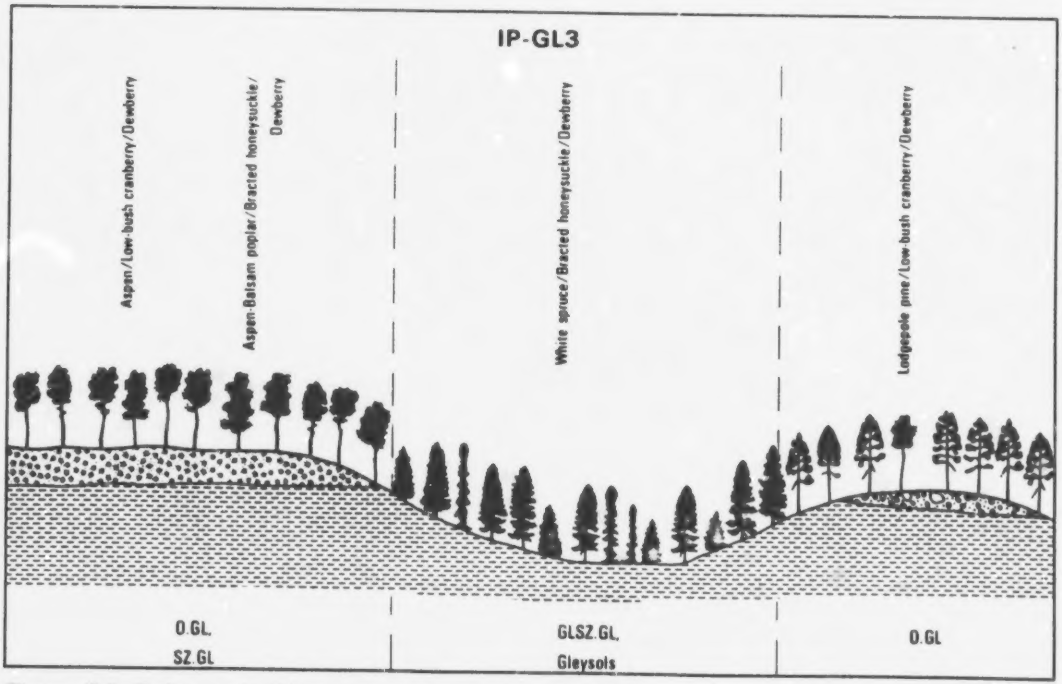

IP-GL3
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
White spruce/Bracted honeysuckle/Dewberry
Lodgepole pine/Low-bush cranberry/Dewberry
O.GL
SZ.GL
GLSZ.GL
Gleysols
O.GL

Figure 24: Schematic Diagram of Ecosection IF-GL3

Physical Conditions:

This gently inclined bedrock ridge (Fig. 25) occurs north of Big Mountain creek and is dissected by Campbell Creek. Surficial materials consist of glaciolacustrine sediments which overlie till deposits. Dark, partially decomposed shales of the Wapiti formation commonly occur within 50 cm of the soil surface and impede groundwater percolation. Groundwater seepage is thus pronounced, and gleyed soils are extremely common on lower slopes.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	SiCL	2-9	2	O.GL, SZ.GL	Aspen/Low-bush cranberry/Dewberry
			3	O.GL, SZ.GL	Aspen/Low-bush cranberry/Dewberry
		0-2	4	GL.GL, GLSZ.GL	Aspen/Balsam poplar/Honeysuckle/ Dewberry
Ov/GL	Mesic/SiCL	0-2	5-6	Mesisols	Larch-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The basic vegetation pattern, with aspen forest on well drained upper slopes and aspen-balsam poplar on moister lower slopes, is similar to IP-GL3. The greater frequency of infilled ponds supporting shrubby and black spruce muskeg, and greater entrainment of seepage into well-defined tracks distinguish this ecosection.

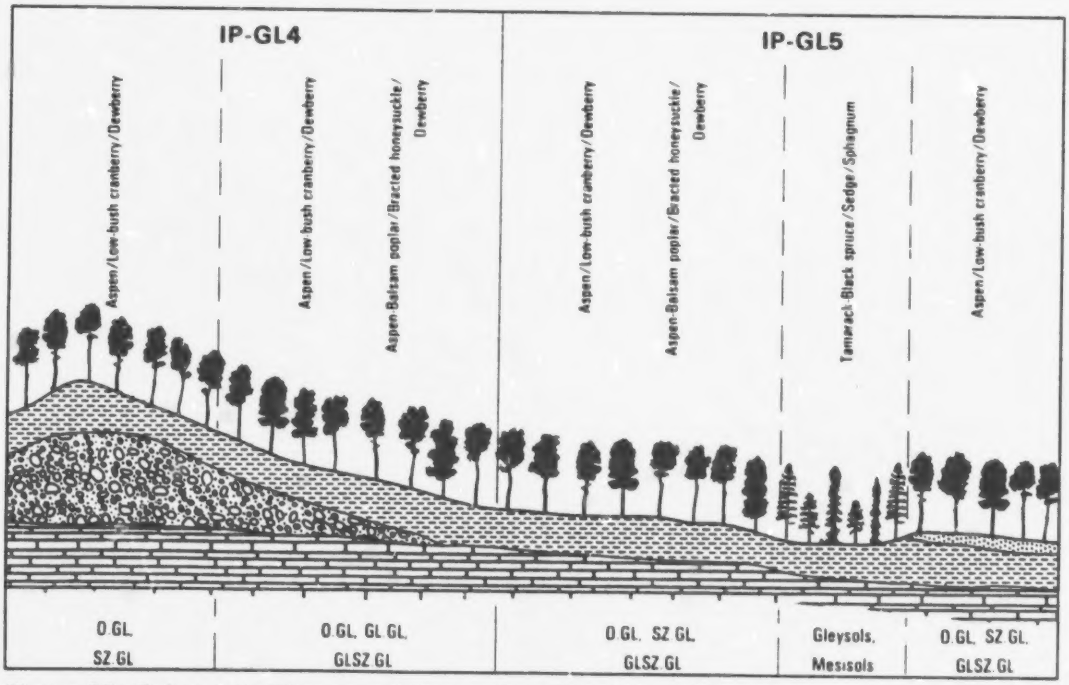

IP-GL4
IP-GL5
Aspen/Low-bush cranberry/Dewberry
Aspen/Low bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/ Dewberry
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/ Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen/Low-bush cranberry/Dewberry
O.GL, SZ.GL
O.GL, GL.GL, GLSZ.GL
O.GL, SZ.GL, GLSZ.GL
Gleysols, Mesisols
O.GL, SZ.GL, GLSZ.GL

Figure 25: Schematic Diagram of Ecosections IP-GL4 and IP-GL5

IP-GL5

Physical Conditions:

This level to very gently undulating glaciolacustrine plain consists of well to imperfectly drained glaciolacustrine sediments, with small scattered accumulations of sedge and sphagnum peats (Fig. 25). Medium textured eolian veneers commonly overlie finer-textured glaciolacustrine sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL, $\frac{\text{Ev}}{\text{GL}}$	CL, $\frac{\text{Si}}{\text{CL}}$	0-2	2	O.GL, SZ.GL	Aspen/Low-bush cranberry/Dewberry
GL	CL	0-2	3-4	O.GL, SZ.GL, GL.GL, GLSZ.GL	Aspen/Balsam poplar/Low-bush cranberry/Dewberry
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss Larch/Sedge/Sphagnum/Black spruce

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Most of the forest vegetation in this ecosection has been cleared for agricultural use. The remainder consists of aspen forest, with a rose understory reflecting the dryness of aeolian veneers, and mixed aspen-balsam poplar forest on moister low-lying sites.

Poorly drained organic soils are fairly common and support sedge and shrub vegetation ringed by black spruce.

IP-GL01

Physical Conditions:

This is a part of an undulating delta complex in which glaciofluvial sands and silts overlie glaciolacustrine sediments (Fig. 19). Glaciofluvial veneers become thicker and coarser-textured towards the north. Much of the landscape is imperfectly to poorly drained with organic soils having developed in depressional terrain.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{GFv}{GL}$	$\frac{S}{CL}$	0-2	1-2	E.EB	Lodgepole pine/Feathermoss
			2-4	BR.GL, BR.GL, GLBR.GL	Aspen/Low-bush cranberry/Dewberry Aspen-balsam poplar/Bracted honeysuckle/Dewberry
$\frac{Ovb}{GL}$	$\frac{Mesic}{CL}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Sphagnum
			6	Mesisols	Larch/Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The vegetation is an irregular mosaic of forested uplands and low-lying wetlands that reflects the pattern of surficial materials and drainage. The upland forest varies from lodgepole pine where sand deposits are thick to aspen where they are thinner and have more available moisture.

Organic deposits inlcude large fens west of the Smoky River and peat-filled potholes throughout the ecosection. Wetlands are most often dominated by sedges and shrubs, and fringed with black spruce forest.

IP-GLO2

Physical Conditions:

This level to very gently undulating glaciolacustrine plain consists of moderately fine to fine-textured glaciolacustrine sediments, which are overlain in some areas by thin medium to coarse-textured glaciofluvial veneers (Fig. 26). Extensive organic accumulations have developed in depressional terrain as a result of groundwater discharge from adjacent slopes (IP-GL4).

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GFv, GL / GL	Si, CL / CL	0-2	2-4	O.GL, SZ.GL, GL.GL, GLSZ.GL	Aspen/Low-bush cranberry/Dewberry Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
GL	CL	0-2	4-5	GL.GL, GLSZ.GL, Gleysols	White spruce/Bracted honeysuckle/Dewberry Black spruce/Labrador tea/Feathermoss
Ovb / GL	Mesic / CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss
			6	Mesisols	Larch/Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

This landscape is distinguished from adjacent ecosections with similar materials (IP-GL4, IP-GL5) by a higher frequency of wetlands. Poorly drained organic soils cover about one-third of the ecosection and support a mixture of shrubby fen vegetation and black spruce forest. A mixture of aspen and aspen-balsam poplar forest occurs on better drained uplands.

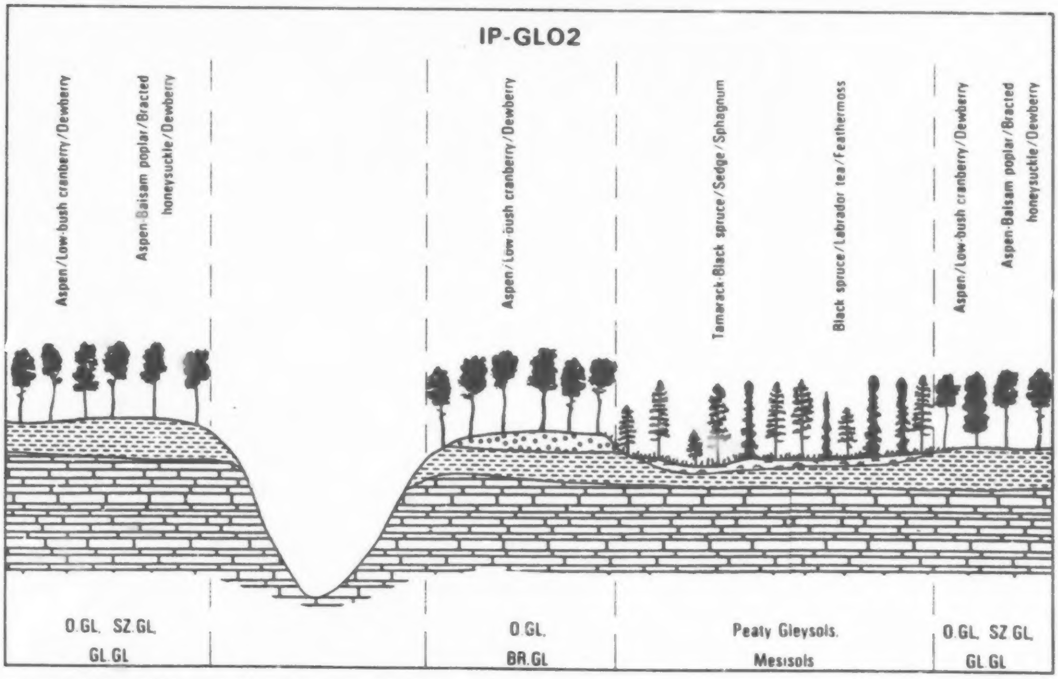

IP-GLO2
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
O.GL. SZ.GL.
GL.GL
O.GL.
BR.GL
Peaty Gleysols.
Mesisols
O.GL. SZ.GL.
GL.GL

Figure 26: Schematic Diagram of Ecosection IP-GLO2

IP-M1

Physical Conditions:

These rounded ridges consist of gently undulating to rolling ground moraine which is often overlain by thin glaciofluvial and/or eolian deposits (Fig. 18). Seepage is pronounced along the interface between till and overlying coarser materials. The thinness of glacioflvuial materials indicates that these areas were covered only briefly by meltwaters before being exposed to wind and water erosion. Small organic deposits occur locally in depressional areas and adjacent to small kettle lakes.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{Ev}{M}$, $\frac{GFv}{M}$	$\frac{Si\text{-}SiS}{SCL}$	2-9	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Dewberry
$\frac{GFv}{M}$, M	$\frac{SL}{SCL}$	0-2	4-5	GL.GL, GLBR.GL, Gleysols	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The widespread occurrence of seepage generally offsets the ecological influence of coarse surficial materials. Aspen forest with a rose-dominated understory typical of dry conditions is only found on well drained hill crests, while a mixed aspen-balsam poplar forest dominates on the rest of the landscape. White spruce and paper birch are common components of the tree canopy along seepage tracks on cool northern exposures.

Physical Conditions:

This is a series of fens that have developed in subdued glacial meltwaters channels (Fig. 27). Accumulations of sedge and sphagnum peat are underlain by either fine-textured glaciolacustrine sediments or bedrock. Slow permeability of these materials and high groundwater tables make lakes and floating bogs common features of the landscape.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{Ob,O}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	6	Mesisols	Black spruce/Labrador tea/Feathermoss Larch/Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Sedge meadows and deciduous shrublands are the dominant vegetation types in the northern parts of this ecosection. Around Wilson Lake, open and closed black spruce forests cover about half the landscape.

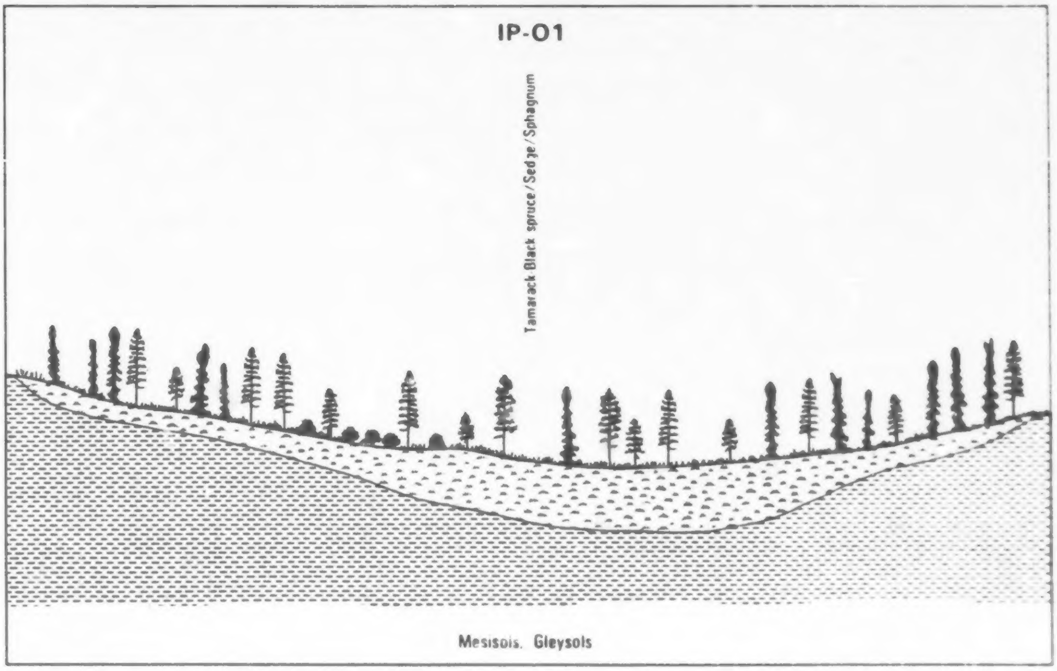


Figure 27: Schematic Diagram of Ecosection IP-O1

2.1.4 Latornell Delta Subregion (Ecodistrict)

Within the Wapiti Plains region the Latornell Delta (Figure 28) is distinctive as a dissected deltaic plain. The subregion is underlain by bedrock of the Wapiti Formation in most locations. However, several isolated uplands are eroded remnants of the Paskapoo Formation which is found in the Simonette Benchlands subregion to the southwest. The underlying strata, which give the subregion a northwest trending slope, are masked by thick glacial deposits. The subregion falls into two ecoregions, the Boreal Mixedwood which is present below 860 m and the Boreal Foothills which is found on the isolated uplands.

The landscape within the subregion has been influenced by the erosional patterns of several major streams. The Kakwa, Smoky and Latornell Rivers along with their tributaries lie in deeply incised valleys which are still actively downcutting, and exposing the underlying bedrock to weathering processes.

The subregion is dominantly mantled by Continental till which is subsequently overlain by a complex of glaciolacustrine and glaciofluvial deposits of variable thickness. The varied drainage conditions associated with this complex of fine to coarse-textured materials results in a diverse vegetation pattern. Aspen forests tend to dominate, however, associations of balsam poplar, white spruce, black spruce and lodgepole pine are also found.

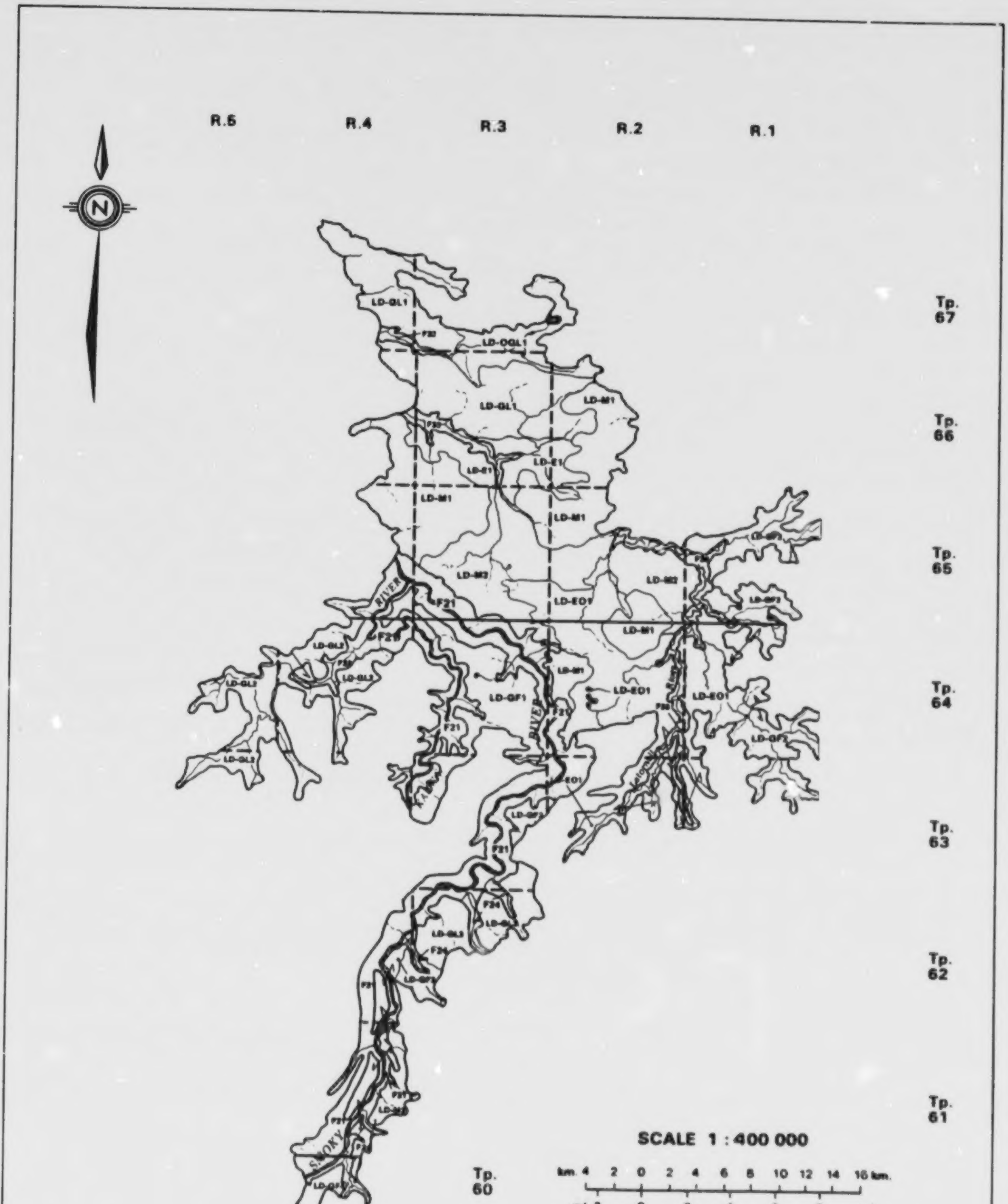

R.5
R.4
R.3
R.2
R.1
N
Tp. 67
Tp. 66
Tp. 65
Tp. 64
Tp. 63
Tp. 62
Tp. 61
Tp. 60
LD-GL1
LD-OGL1
LD-M1
LD-E1
LD-M2
LD-EO1
LD-GF1
LD-GL3
LD-GF2
F21
F24
RIVER
SMOKY
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi
West of the Sixth Meridian

Figure 28: Latornell Delta Subregion (LD)

Eolian deposits, which in this case originate from glaciofluvial sediments, are common in the subregion. Variable drainage conditions are found in these areas depending on the depth of the sands. Vegetation reflects this complex drainage pattern with lodgepole pine occurring on the driest sites, mixtures of aspen, lodgepole pine and white spruce on intermediate sites and black spruce in the wetter locations.

Significant amounts of organic deposits are found within the subregion and these tend to support black spruce, tamarack and sedge vegetation. In addition, a complex pattern of vegetation can be found within the deeply incised river valleys. The colluvium and undifferentiated materials present along the valley walls make for a varied landscape in which a variety of vegetation associations have flourished.

The subregion has been divided into eleven ecosection/systems (Table 10) reflecting the complex nature of this former deltaic plain. Six fluvial systems have been identified (F4, F21, F23, F24, F37, F38) and are discussed in section 2.5 of Volume 1.

Table 10

ECOSECTIONS/SYSTEMS IN THE LATORNELL DELTA

ECUSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
LD-E1	Ridged dune plains	Eolian sand and peat	Black spruce, pine and aspen forest
LD-EO1	Rolling eolian plains	Eolian and glaciofluvial sand and peat	Black spruce and lodgepole pine forest
LD-GF1	Undulating outwash plain	Glaciofluvial sand and peat	Aspen and black spruce-lodgepole pine forest, and treed and shrubby muskeg
LD-GF2	Subdued valley	Glaciofluvial sand and peat	Lodgepole pine-black spruce forest and treed muskeg
LD-GF3	Inclined terraces	Glaciofluvial sand	Lodgepole pine forest
LD-GL1	Undulating glaciolacustrine plain	Glaciolacustrine clay with sandy overlays	Aspen and balsam poplar poplar forest
LD-GL2	Gently undulating glaciolacustrine basin	Glaciolacustrine clay and peat	Lodgepole pine-black spruce forest
LD-GL3	Gently sloping terraces	Thin peat	Open black spruce forest
LD-M1	Undulating to inclined plateau	Till with sandy overlays	Lodgepole pine, white spruce and aspen forest
LD-M2	Subdued valleys with meltwater channels	Till with sandy overlays	Aspen, lodgepole pine and black spruce forest
LD-DGL1	Glacial meltwater channel	Peat and glaciolacustrine clay	Shrubby and treed muskeg, and aspen-balsam poplar forest

LD-E1

Physical Conditions:

This level to gently inclined eolian plain (Figure 29) occurs east of the Smoky River. It is characterized by distinct parabolic dunes and eolian sands of varying thickness which are underlain at depth by fine-textured glaciolacustrine sediments. Small organic accumulations occur locally.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{Evb}{GL}$	$\frac{S}{CL/C}$	0-2	3-5	BR.GL, GLBR.GL, Gleysols	Black spruce/Labrador tea/Feathermoss
E	S	2-9	1	E.EB	Lodgepole pine/Blueberry/Lichen
			2	E.EB	Aspen/Rose/Pea vine
Ovb	Mesic	0-2	6	Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The influence of coarse-textured surficial materials is modified considerably by underlying glaciolacustrine clays that keep seepage water near the surface. Low-lying areas are poorly drained with black spruce forest found on organic soils and thin sand deposits. Sheet sand deposits on slopes fed by moving groundwater support aspen forest, while lodgepole pine forest is only found on the rapidly drained dunes.

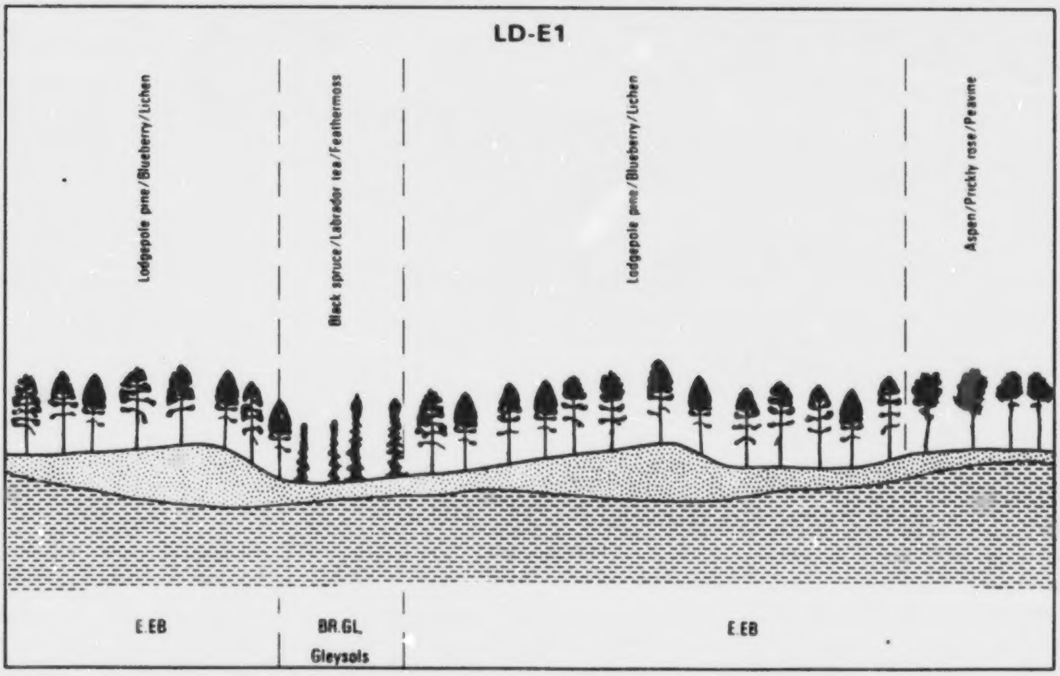

LD-E1
Lodgepole pine/Blueberry/Lichen
Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Blueberry/Lichen
Aspen/Prickly rose/Peavine
E.EB
BR.GL
Gleysols
E.EB

Figure 29: Schematic Diagram of Ecosection LD-E1

Physical Conditions:

This eolian complex (Figure 30) occurs in the vicinity of Karr Lake and consists of reworked outwash sand deposits with extensive organic accumulations occurring in depressional terrain. Longitudinal dunes, parabolic dunes, eskers and small kettle lakes are common features of the landscape. A complex of moderately fine-textured continental tills and glaciolacustrine deposits underlie this system. Small morainal outcrops occur in the western part of the ecosection.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
E, GF	S	2-15	1-2	E.EB	Lodgepole pine/Labrador tea/Lichen
Evb M/GL	S SCL	0-2	2-4	E.EB, BR.GL, GLE.EB	Lodgepole pine-Black spruce/Labrador tea/Feathermoss
			4-5	Gleysols	Black spruce/Feathermoss
O	Mesic	0-2	5-6	Mesisols, Peaty Gleysols	Tamarack-Black spruce/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Variation in the reworking of glaciofluvial sand deposits by wind combined with groundwater discharge has produced the vegetation pattern on this landscape. A field of large dunes between the Smoky and Latornell Rivers has a classical pattern, with lodgepole pine forest on dry dune ridges and open black spruce forest on the organic soils between dunes. Elsewhere, reworking by wind has not been as extensive and soil moisture variation is not as pronounced. Subdued sand ridges and thin sheet deposits support lodgepole pine-black spruce and dense black spruce forest, with open wetland vegetation limited in extent.

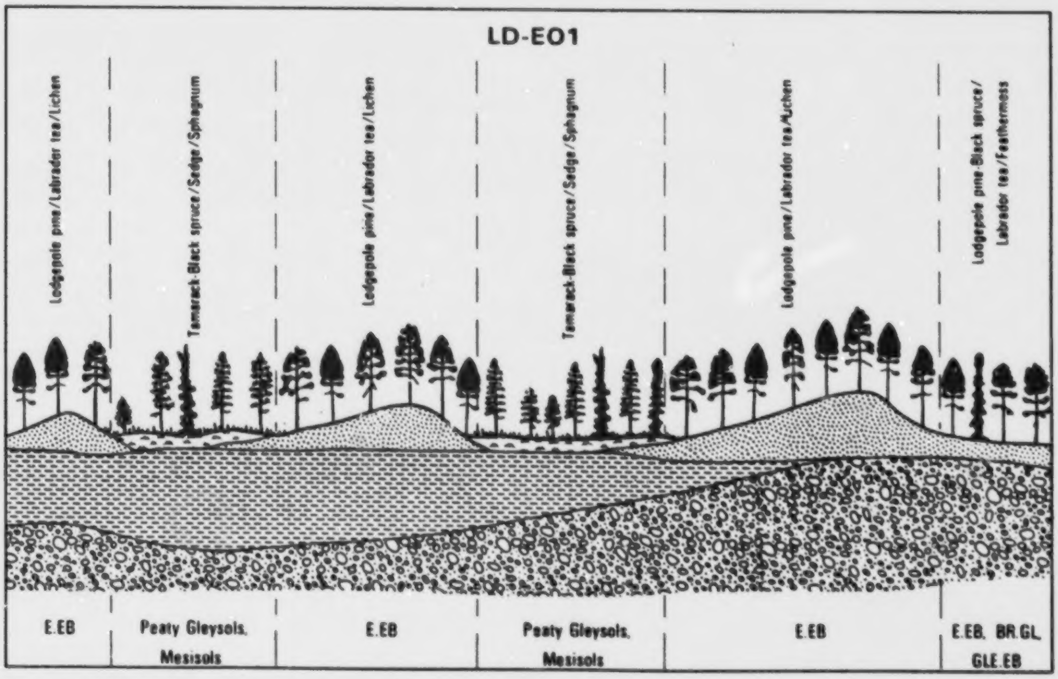

LD-EO1
Lodgepole pine/Labrador tea/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Lichen
Lodgepole pine-Black spruce/
Labrador tea/Feathermoss
E.EB
Peaty Gleysols,
Mesisols
E.EB
Peaty Gleysols,
Mesisols
E.EB
E.EB, BR.GL,
GLE.EB

Figure 30: Schematic Diagram of Ecosection LD-EO1

LD-GF1

Physical Conditions:

This very gently undulating to moderately inclined outwash plain (Figure 31) is located immediately south of the confluence of the Kakwa and Smoky Rivers. Thick deltaic glaciolfuvial sands are the principal surficial materials across the ecosection. These deltaic materials are underlain at depth by a combination of moderately fine-textured Continental till and fine-textured glaciolacustrine sediments. Locally, where glaciofluvial materials are thin or absent, organic accumulations have developed. Small, subdued dunes occur locally.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF, E	S	2-15	1-3	E.EB, BR.GL	Aspen/Rose/Pea vine Lodgepole pine/Feathermoss
			3-4	BR.GL, GLBR.GL	Lodgepole pine-Black spruce/Labrador tea/Feathermoss
			5	Peaty Gleysols	Black spruce/Feathermoss
Ovb M/GL	Mesic CL	0-2	6	Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

A topographically controlled moisture gradient determines the vegetation pattern on this landscape. Aspen and lodgepole pine forest is found on well-drained ridge tops, with lodgepole pine-black spruce forest on side slopes where more moisture is available. Black spruce forest occurs in poorly-drained groundwater discharge areas on lower slopes and valley bottoms. Level to depressional terrain where groundwater accumulates has a mixture of open black spruce forest and shrubby muskeg.

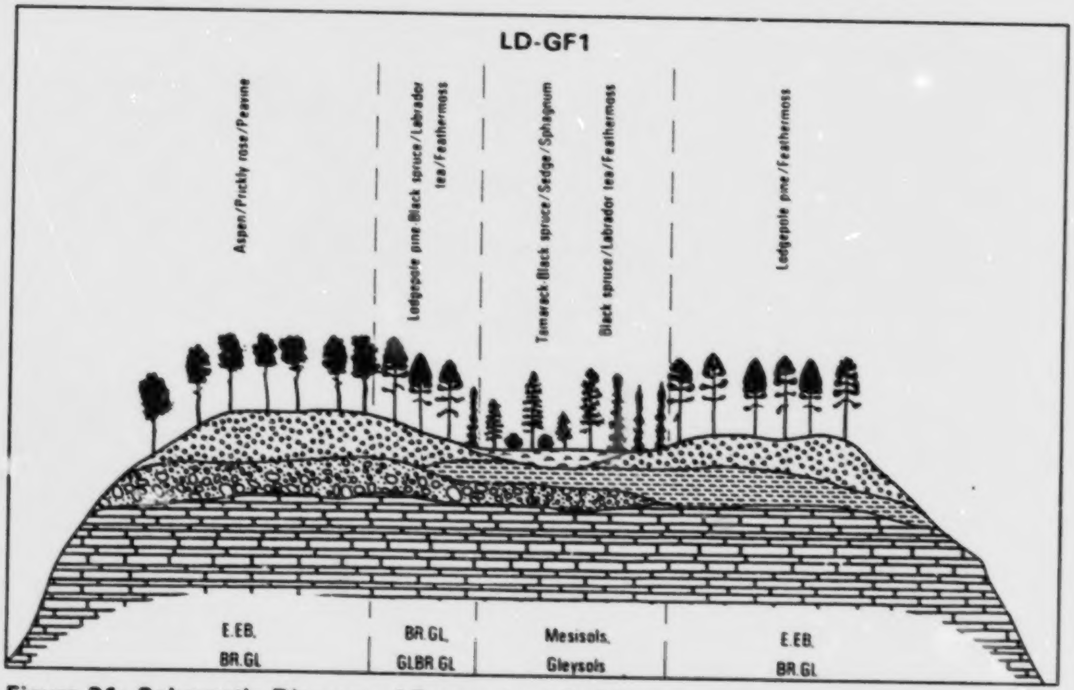

LD-GF1
Aspen/Prickly rose/Peavine
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Tamarack-Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Feathermoss
E.EB.
BR.GL
BR.GL.
GLBR.GL
Mesisols.
Gleysols
E.EB.
BR.GL

Figure 31: Schematic Diagram of Ecosection LD-GF1

LD-GF2

Physical Conditions:

This system occupies the eroded tributary valleys east of the Latornell River (Figure 32). Undulating to hummocky glaciofluvial sands are the principal surficial materials. These rapidly to poorly drained materials are underlain at depth by a complex of moderately fine to fine textured Continental tills and glaciolacustrine sediments. The presence of numerous dunes south of Moose River indicate that these deposits have been reworked by wind. Organic accumulations occur locally.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{GFv}}{\text{GL/M}}$	$\frac{\text{S}}{\text{CL}}$	2-9	4-5	GLBR.GL, Peaty Gleysols	Black spruce/Feathermoss
GF, $\frac{\text{GFb}}{\text{GL}}$	$\frac{\text{S-SL}}{\text{CL}}$	0-6	2-3	E.EB	Lodgepole pine-Black spruce/Labrador tea/Feathermoss Aspen/Rose/Pea vine
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	6	Mesisols	Tamarack-Black spruce/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Groundwater discharge from the adjacent Simonette Benchlands causes imperfectly to poorly drained conditions to predominate and lodgepole pine-black spruce and black spruce forest covers most of the landscape. Poorly drained organic soils between sand ridges support open black spruce muskeg. The thick, well-drained sand deposits near the Latornell River are covered by aspen forest.

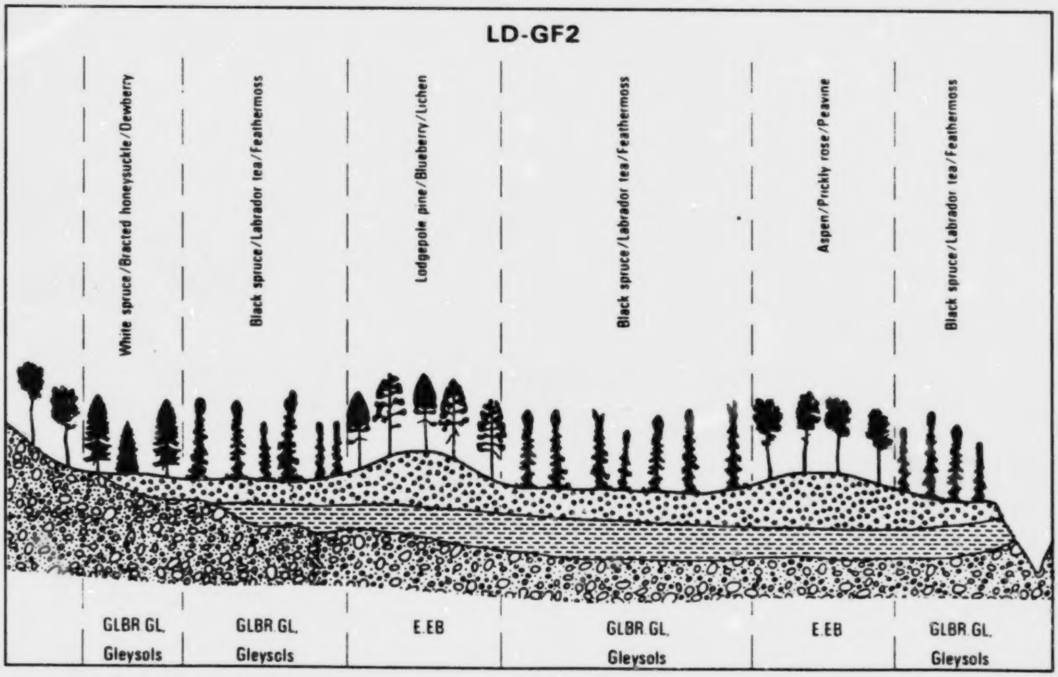

LD-GF2
White spruce/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Blueberry/Lichen
Black spruce/Labrador tea/Feathermoss
Aspen/Prickly rose/Peavine
Black spruce/Labrador tea/Feathermoss
GLBR GL.
Gleysols
GLBR GL.
Gleysols
E.EB
GLBR GL.
Gleysols
E.EB
GLBR GL.
Gleysols

Figure 32: Schematic Diagram of Ecosection LD-GF2

LD-GF3

Physical Conditions:

Located within the Smoky River valley, this system consists of a series of inclined glaciofluvial terraces that are some 60-70 m above the present floodplain (Figure 33). Approximately 10-25 cm of sand overlies coarse gravels. Organic accumulations of sphagnum peat are common at the bases of adjacent slopes (LD-GL3).

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	S	0-2	1-2	E.EB	Lodgepole pine/Labrador tea/Lichen

Ecoregion: Boreal Foothills

Ecological Conditions:

Coarse sand and gravel provides a dry, nutrient-poor environment on these terraces that support open lodgepole pine forest. A mixed shrubland of willow, dwarf birch and paper birch occurs at the base of slopes where groundwater is discharged.

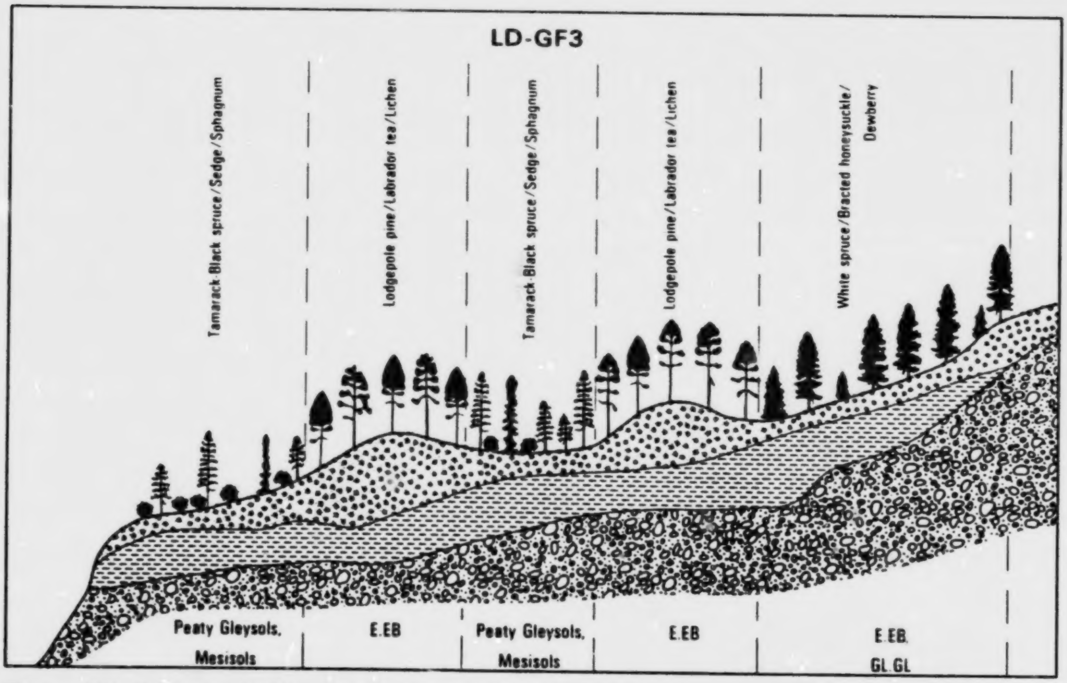

LD-GF3
Tamarack-Black spruce/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Lichen
Tamarack-Black spruce/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Lichen
White spruce/Bracted honeysuckle/Dewberry
Peaty Gleysols, Mesisols
E.EB
Peaty Gleysols, Mesisols
E.EB
E.EB, GL.GL

Figure 33: Schematic Diagram of Ecosection LD-GF3

LD-GL1

Physical Conditions:

This level to gently undulating glaciolacustrine plain (Figure 34) borders the east side of the Smoky River and has been dissected by an unnamed (Zero Creek) tributary stream of the Smoky River. Numerous small glacial meltwater channel indicate that the Latornell Delta was expanding and glaciofluvial veneers were dispersed over much of the glaciolacustrine plain. These veneers become thicker closer to the Smoky River and the unnamed tributary system. Slightly stony Continental tills underlie the entire area.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GFv/GL	S-Si/CL	2-6	2-3	BR.GL	Aspen/Low-bush cranberry/Dewberry
			3	BR.GL	White spruce/Bracted honeysuckle/Dewberry
GL, GLb/M	CL	2-6	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Dewberry
			4	GL.GL	Aspen/Balsam poplar/Bracted honeysuckle/Dewberry
Ov/GL	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Coarse-textured overlays have little apparent influence on the vegetation pattern because of low permeability of underlying materials, although summer drought may retard successional rates. The upland forest is dominated by aspen on level sites and by aspen and balsam poplar on slopes where there is seepage. White spruce stands are limited in extent and confined to seepage tracks.

Poorly drained subdued meltwater channel support willow shrubland and closed black spruce forest.

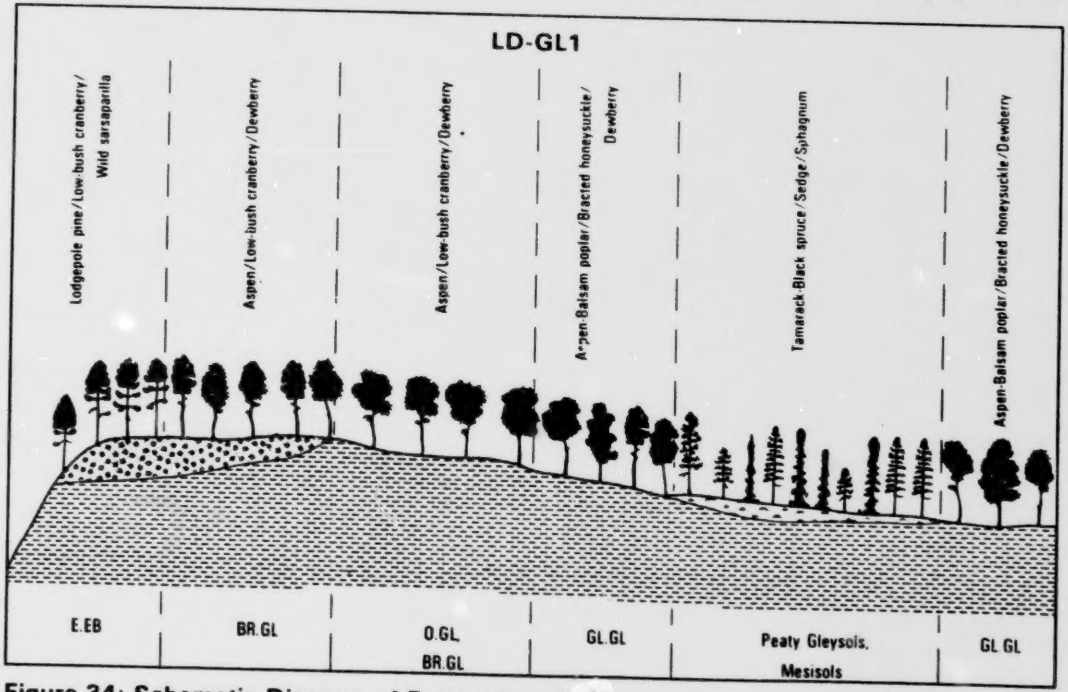

LD-GL1
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Aspen/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Tamarack-Black spruce/Sedge/Sphagnum
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
E.EB
BR.GL
O.GL
BR.GL
GL.GL
Peaty Gleysols,
Mesisols
GL.GL

Figure 34: Schematic Diagram of Ecosection LD-GL1

Physical Conditions

This poorly drained glaciolacustrine basin (Figure 35) occurs in the vicinity of Musreau Lake and extends eastward towards the Kakwa River. Slowly permeable glaciolacustdrine sediments combined with groundwater discharge from the adjacent Cutbank Benchlands give rise to poorly drained conditions. Sediment thickness varies from thin veneers overlying till around the edges to thick, varved deposits surrounding Musreau Lake. Glaciofluvial veneers are common adjacent to surrounding systems (CB-M1, CB-M3).

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	CL	0-5	4	GLSZ.GL, GL.GL	Lodgepole pine/Black spruce-Labrador tea Feathermoss
Ov/GL	Mesic/CL	0-2	5	Peaty Gleysols	Black spruce/Feathermoss
Ob/GL	Mesic/CL	0-2	6	Mesisols	Tamarack-Black spruce
GFv/GL	Si/CL	3-9	3	BR.GL	Lodgepole pine/Black spruce/Labrador tea/ Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

Slopes, while gentle, permit sufficient groundwater movement so that forest rather than muskeg has developed on most of the landscape. The forest is dominated by black spruce and lodgepole pine, with local dominance shifting toward lodgepole pine on drier glaciofluvial overlays. Small areas of dwarf birch and sedge-dominated wetlands are found in the low-lying areas between glaciofluvial deposits.

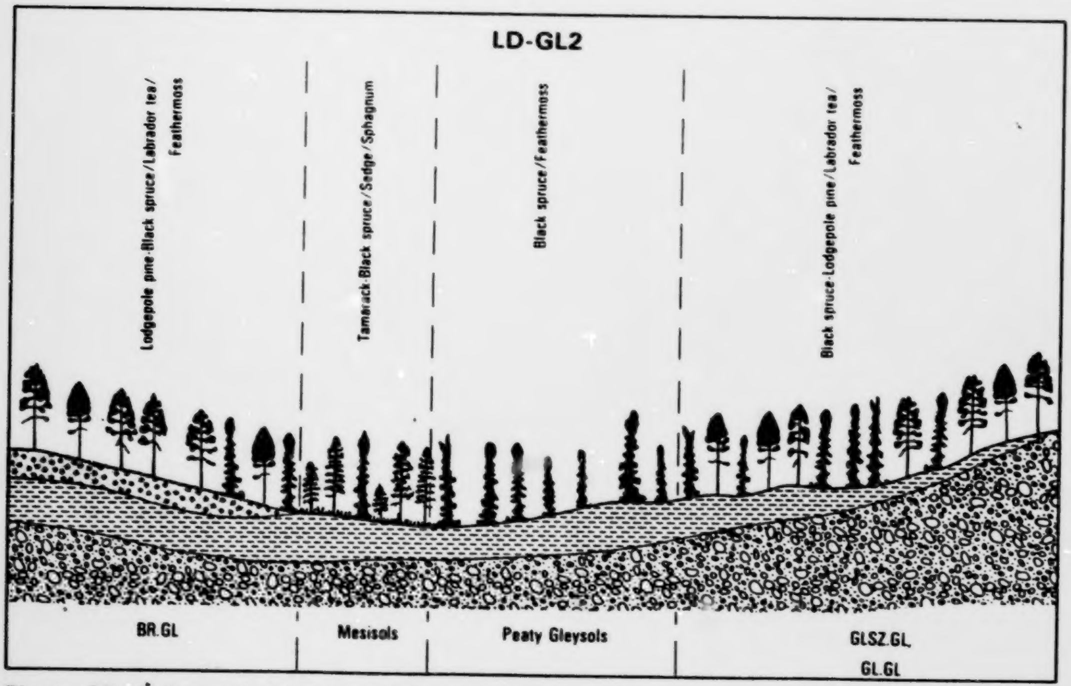

LD-GL2
Lodgepole pine-Black spruce/Labrador tea/ Feathermoss
Tamarack-Black spruce/Sedge/Sphagnum
Black spruce/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/ Feathermoss
BR.GL
Mesisols
Peaty Gleysols
GLSZ.GL
GL.GL

Figure 35: Schematic Diagram of Ecosection LD-GL2

LD-GL3

Physical Conditions

This is a dissected, gently sloping glaciolacustrine terrace on the east side of the Smoky River, 250-300 m above the floor of the present river valley (Figure 36). Thin glaciofluvial deposits commonly overlie glaciolacustrine sediments, but prevailing drainage conditions are imperfect to poor because of fine underlying materials and groundwater discharge from the adjacent Simonette Uplands. Some small dunes are found in the northern part of the area.

Materials	Texture	Slope	Drainage	Soils .	Plant Associations
$\frac{\text{Ov}}{\text{GL/M}}$	$\frac{\text{Mesic}}{\text{SCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss
GF, $\frac{\text{GFvb}}{\text{GL/M}}$	S, $\frac{\text{S}}{\text{SCL}}$	0-15	2-3	E.EB	White spruce/Low-bush cranberry/Dewberry
$\frac{\text{Evb}}{\text{GL}}$	LS	0-15	2	E.EB	Lodgepole pine/Labrador tea/Lichen

Ecoregion: Boreal Foothills

Ecological Conditions

Underlying clays impede drainage and restrict rooting depth, so that most of the landscape is covered with an open bog forest of shallowly rooted black spruce. Sand deposits close to the river, which provide greater ease of rooting are fed by seepage water, support white spruce forest. Lodgepole pine forest occurs in dry dune environments.

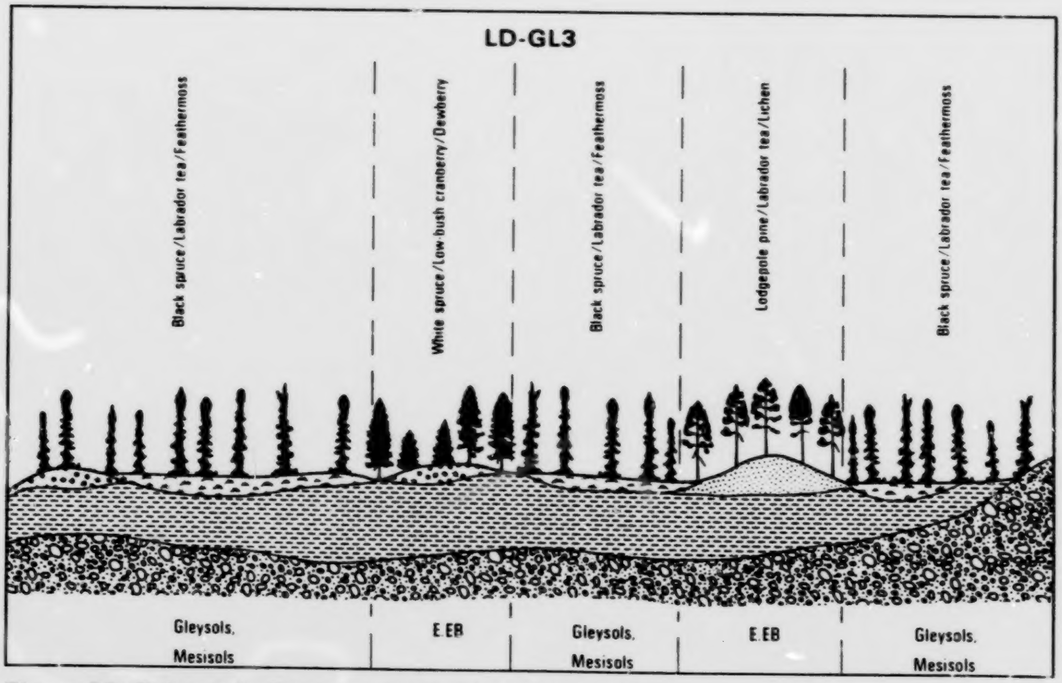

LD-GL3
Black spruce/Labrador tea/Feathermoss
White spruce/Low-bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Lichen
Black spruce/Labrador tea/Feathermoss
Gleysols, Mesisols
E.EB
Gleysols, Mesisols
E.EB
Gleysols, Mesisols

Figure 36: Schematic Diagram of Ecosection LD-GL3

Physical Conditions

This series of very gently undulating to strongly inclined plateau remnants (Figure 37) are located between the Smoky and Latornell Rivers. These plateau remnants are covered by moderately fine-textured, slightly stony Continental tills. These till deposits are overlain on lower slope positions by thin fluvial veneers derived from slope wash and on upper slope positions by sandy eolian materials of variable thickness.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{Mv}{R}$	SCL/CL	2-30	2-3	BR.GL, O.GL	Aspen/Low-bush cranberry/Dewberry
			3-4	BR.GL, O.GL, GL.GL, GLBR.GL	Aspen/Thimbleberry/Wild sarsaparilla White spruce/Bracted honeysuckle/Dewberry
$\frac{Evb}{M}$	$\frac{S}{SCL}$	2-5	2-3	PZ.GL, BR.GL, E.EB	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla White spruce/Low-bush cranberry/Dewberry

Ecoregion: Boreal Mixedwood
Boreal Foothills

Ecological Conditions

The occurrence of coarse-textured overlays with pronounced seepage along the interface between coarse and fine-textured materials creates a different pattern here than it does elsewhere in the subregion. Well-drained ridge tops support lodgepole pine forest, while a mixture of white spruce, aspen and pine forests with lush understory occurring on slopes. Mineral enrichment of moving groundwater may account for the apparently high productivity of these forest stands.

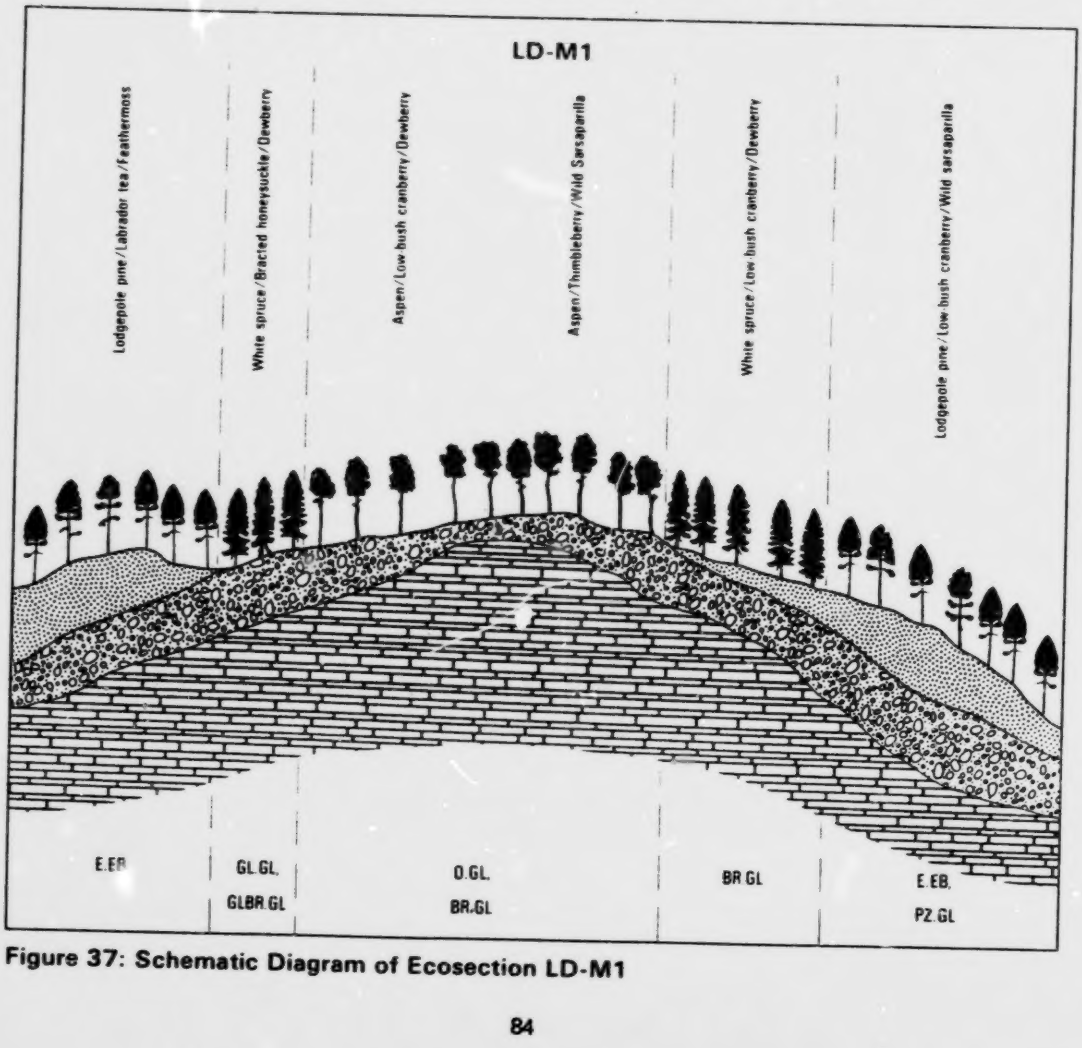

LD-M1
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Bracted honeysuckle/Dewberry
Aspen/Low-bush cranberry/Dewberry
Aspen/Thimbleberry/Wild Sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
E.EB
GL.GL,
GLBR.GL
O.GL,
BR.GL
BR.GL
E.EB,
PZ.GL

Figure 37: Schematic Diagram of Ecosection LD-M1

LD-M2

Physical Conditions:

This low-lying area (Figure 38) occurs between the Smoky and Latornell Rivers and is characterized by hummocky till deposits of Continental origin. These till deposits are medium to moderately fine-textured and are slightly stony in nature. In the extreme western portion of the system, thick outwash sands commonly overlie till deposits in a subdued glacial meltwater channel. Eolian materials of variable thickness commonly overlie till deposits to the north and south of this channel.

Materials	Texture	Slopes	Drainage	Soils	Plant Associations
M	SCL-CL	0-5	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Dewberry
GFvb/M	S-Si/SCL-CL	0-5	3-5	BR.GL, E.EB, GLBR.GL GLE.EB	Lodgepole pine-Low-bush cranberry-Wild sarsaparilla-White spruce-Low-bush cranberry-Dewberry
GF	S-Si	0-2	4-5	GLE.EB, Gleysols	Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions

The complexity of the vegetation pattern is a reflection of the complex pattern of surficial materials. Hummocky moraine supports aspen forest, with black spruce stands in poorly drained depressions. Where till is overlain by glaciofluvial sand, an upland forest of lodgepole pine and white spruce has developed. Black spruce forest covers the poorly drained meltwater channel, with open pine forest on isolated eskers and dunes and shrubby muskeg around ponds.

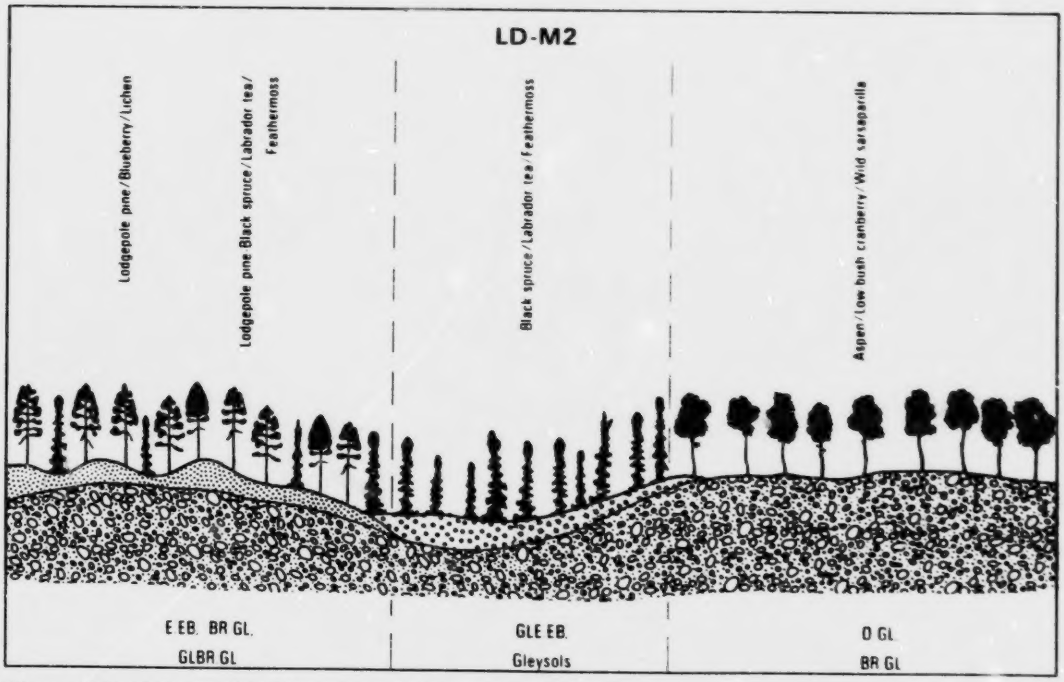

LD-M2
Lodgepole pine/Blueberry/Lichen
Lodgepole pine Black spruce/Labrador tea/ Feathermoss
Black spruce/Labrador tea/Feathermoss
Aspen/Low bush cranberry/Wild sarsaparilla
E EB. BR GL.
GLBR GL
GLE EB.
Gleysols
O GL
BR GL

Figure 38: Schematic Diagram of Ecosection LD-M2

Physical Conditions

This former glacial meltwater channel (Figure 39) is located between the Latornell and Smoky Rivers. Accumulations of sedge and sphagnum peat dominate this gently undulating landscape. These organic materials are underlain by moderately fine-textured glaciolacustrine sediments, which are commonly exposed at the surface. In some areas, medium textured glaciofluvial outwash materials overlie these slowly permeable glaciolacustrine materials. Several subdued eskers occur immediately adjacent to the Latornell and Smoky Rivers.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Sedge/Sphagnum Black spruce/Labrador tea/Feathermoss
GL	CL	0-2	3-4	O.GL, GL.GL	Aspen/Balsam poplar/Bracted honeysuckle/ Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions

Black spruce forest predominates on this poorly drained landscape, with sedge-dominated wetlands bordering ponds and streams. Aspen-balsam poplar forest occurs on slightly elevated glaciolacustrine outcrops, while scattered small eskers support lodgepole pine forest.

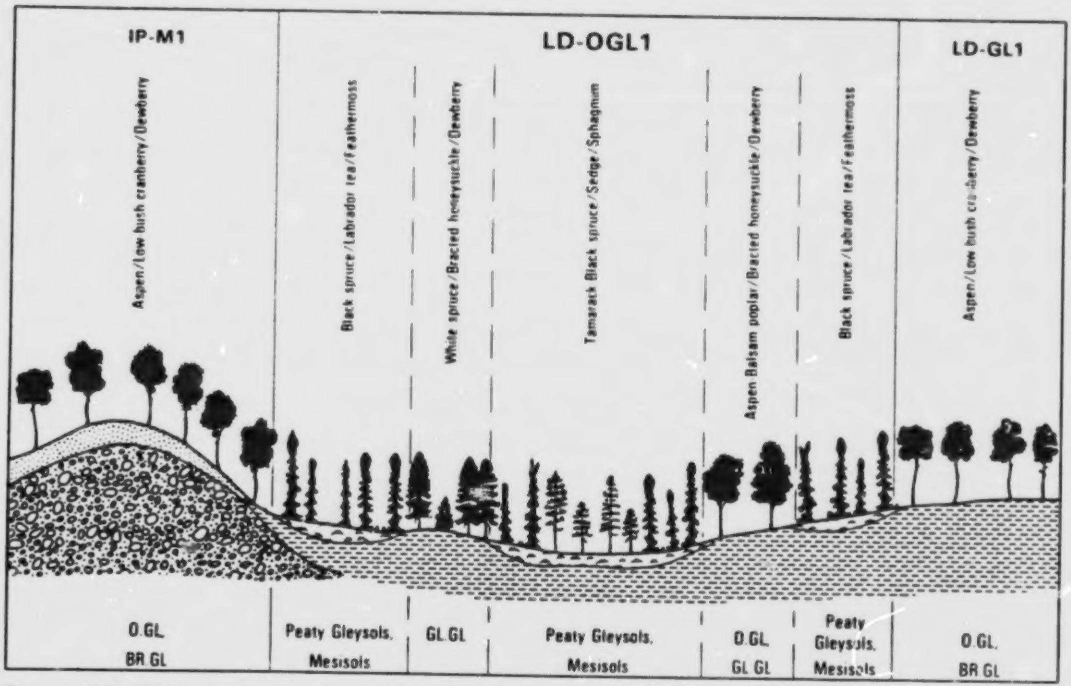

IP-M1
LD-OGL1
LD-GL1
Aspen/Low bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
White spruce/Bracted honeysuckle/Dewberry
Tamarack Black spruce/Sedge/Sphagnum
Aspen Balsam poplar/Bracted honeysuckle/Dewberry
Black spruce/Labrador tea/Feathermoss
Aspen/Low bush cranberry/Dewberry
O.GL
BR.GL
Peaty Gleysols, Mesisols
GL.GL
Peaty Gleysols, Mesisols
O.GL
GL.GL
Peaty Gleysols, Mesisols
O.GL
BR.GL

Figure 39: Schematic Diagram of Ecosection LD-OGL1

2.1.5 Pinto Plain Subregion (Ecodistrict)

The Pinto Plain stretches across the north-northwestern portion of the study area (Figure 40) and consists of a subdued to rolling bedrock controlled plain. The underlying rock strata is of the Wapiti Formation and is exposed at several locations within the Wapiti River and Nose Creek valleys. The rolling terrain gives a varied relief with elevations ranging from 620 m to 1 000 m. Within this subregion the vegetation is influenced by factors found in both the Boreal Mixedwood and Boreal Foothills ecoregions.

Glacial activity left a very heterogeneous landscape which has been subsequently eroded by wind and water. Glaciolacustrine sediments and till deposits generally dominate with complexes of glaciofluvial, eolian, organic and fluvial materials very common. These surficial materials have masked the influence of regional climate resulting in a complex mosaic of overstory types which are largely controlled by edaphic factors.

The western part of the subregion is dominated by ablation till of Continental origin which is often overlain by glaciolacustrine and glaciofluvial materials. Lodgepole pine is dominant over much of this area above 860 m. Below this elevation aspen forests are much more common. Black spruce, tamarack and white spruce are also present over much of this area.

In those areas of the subregion where fluted till is the dominant surficial material a complex of vegetation occurs. Aspen forest is

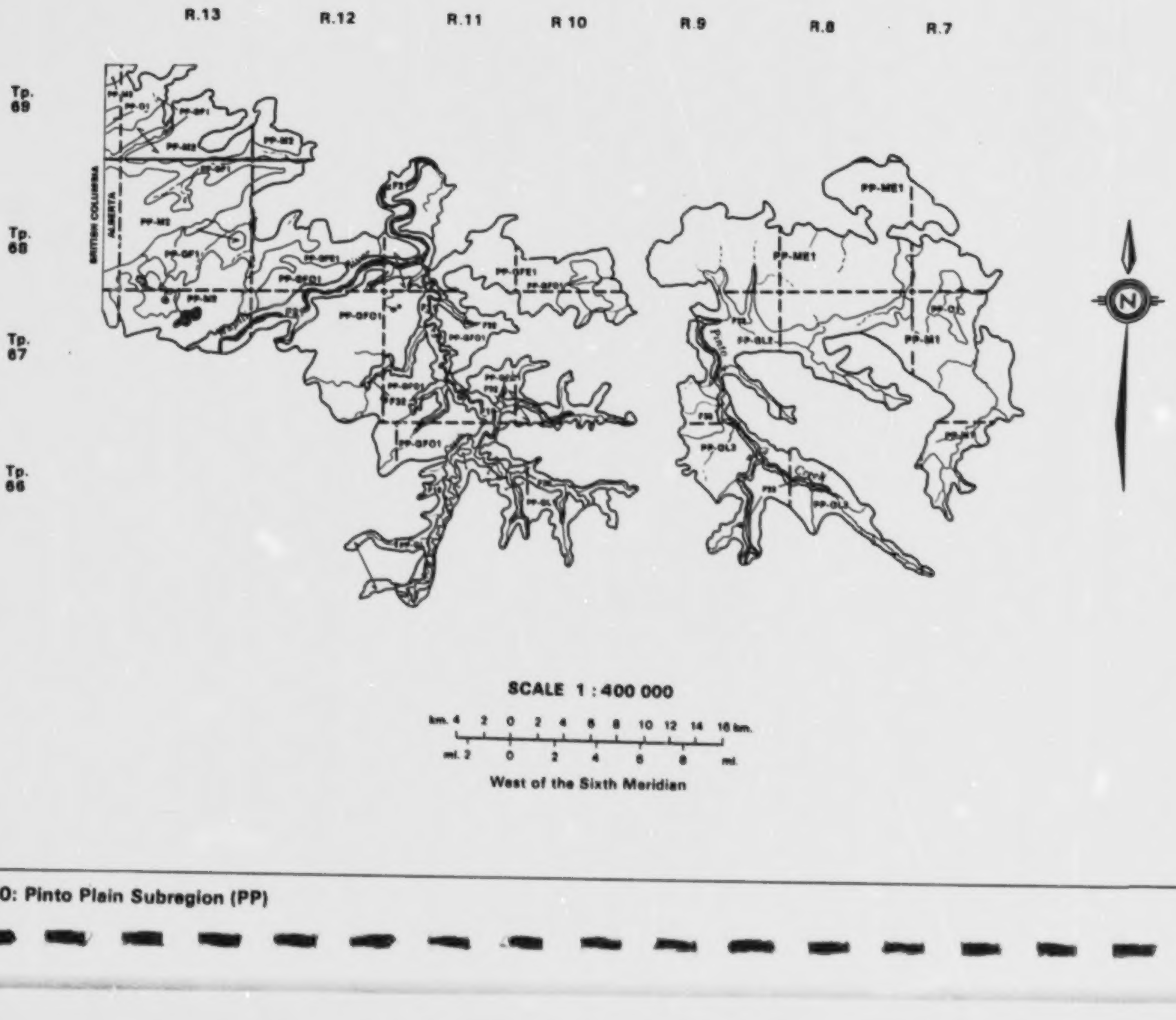

R.13
R.12
R.11
R 10
R.9
R.8
R.7
Tp. 69
Tp. 68
Tp. 67
Tp. 66
BRITISH COLUMBIA
ALBERTA
PP-GF1
PP-M2
PP-GFO1
PP-GFE1
PP-ME1
PP-GL2
PP-GL3
PP-M1
F22
Pinto
Creek
N
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 40: Pinto Plain Subregion (PP)

is common with understories reflecting variable drainage conditions. Lodgepole pine, black spruce, tamarack and white spruce vegetation all occur in association with the aspen forest.

A complex of glaciolacustrine, eolian and organic deposits occurs locally throughout the subregion and also supports varied vegetation types. The glaciolacustrine materials are generally poorly drained, hence they support wetland vegetation consisting of black spruce and tamarack. The eolian materials tend to support a complex of lodgepole pine, aspen and wetland vegetation dependent on drainage conditions.

The subregion has been divided into ten ecosection/systems. Landform, parent material and vegetation of each are displayed in Table 11. More detailed descriptions with accompanying schematic diagrams follow the table.

The Pinto Plain was identified as having six fluvial systems (F18, F21, F30, F32, F32, F33). These are discussed in Section 2.5 of Volume I.

Table 11

ECOSECTIONS/SYSTEMS OF THE PINTO PLAIN

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
PP-GF1	Glacial meltwater channel	Glaciofluvial sand and peat	Lodgepole pine, white spruce and black spruce forest
PP-GFE1	Rolling outwash plain	Glaciofluvial sand and eolian silt	Aspen and lodgepole pine forest
PP-GFO1	Gently rolling outwash plain	Glaciofluvial sand and gravel, peat	Lodgepole pine and open black spruce forest, sedge meadows
PP-GL1	Undulating glaciolacustrine terraces	Glaciolacustrine clay and peat	Lodgepole pine, aspen and white spruce forest
PP-GL2	Gently sloping basin	Peat and glaciolacustrine clay with silty overlays	Shrubby and treed muskeg, lodgepole pine and black spruce forest
PP-GL3	Gently rolling basin	Glaciolacustrine clay with overlays of silt and peat	Aspen, balsam poplar and black spruce forest, shrubby muskeg
PP-M1	Fluted till plain	Fine-textured till	Aspen, balsam poplar and white spruce forest
PP-M2	Subdued bedrock ridges	Fine-textured pitted till	Lodgepole pine, aspen and white spruce forest
PP-ME1	Rolling bedrock ridge	Fine-textured till with silty overlay	Aspen and balsam poplar forest
PP-O1	Depressional bogs and fens	Peat	Open black spruce forest, deciduous shrubland

PP-GF1

Physical Conditions

This subdued glacial meltwater channel (Figure 41) is occupied by parts of Diamond Dick, Sylvester and Calahoo Creeks. Medium to coarse-textured glaciofluvial materials are underlain at depth by finer-textured glaciolacustrine sediments below 820 m and by moderately fine-textured Continental tills above 820 m. Impedance of drainage and excessive seepage causes imperfectly to poorly-drained conditions to dominate. Rapidly drained eskers and poorly drained backwater terraces are common especially throughout the Calahoo Creek valley.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{GFvb}}{\text{GL/M}}$	$\frac{\text{SL}}{\text{CL/SiCL}}$	2-5	3-4	BR.GL, GLBR.GL	Lodgepole pine-Black spruce/Labrador tea/ Feathermoss
			4-5	GLBR.GL, Gleysols	White spruce/Low-bush cranberry/Dewberry, Black spruce/Feathermoss
GF	SL/SiL	2-15	1-2	BR.GL, E.EB	Lodgepole pine/Feathermoss
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Mesisols, Gleysols	Larch-Black spruce/Sedge/Sphagnum, Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Foothills
Boreal Mixedwood

Ecological Conditions:

Variation in the depth of glaciofluvial deposits creates a moisture gradient that controls the vegetation patterns. The driest environments on eskers and other thick deposits support lodgepole pine forest. Thinner deposits cover most of the landscape and support lodgepole pine- black spruce and black spruce forests, with white spruce forest found at the base of slopes where there is moving groundwater. Open shrubby wetland vegetation occurs on poorly drained depressional terrain.

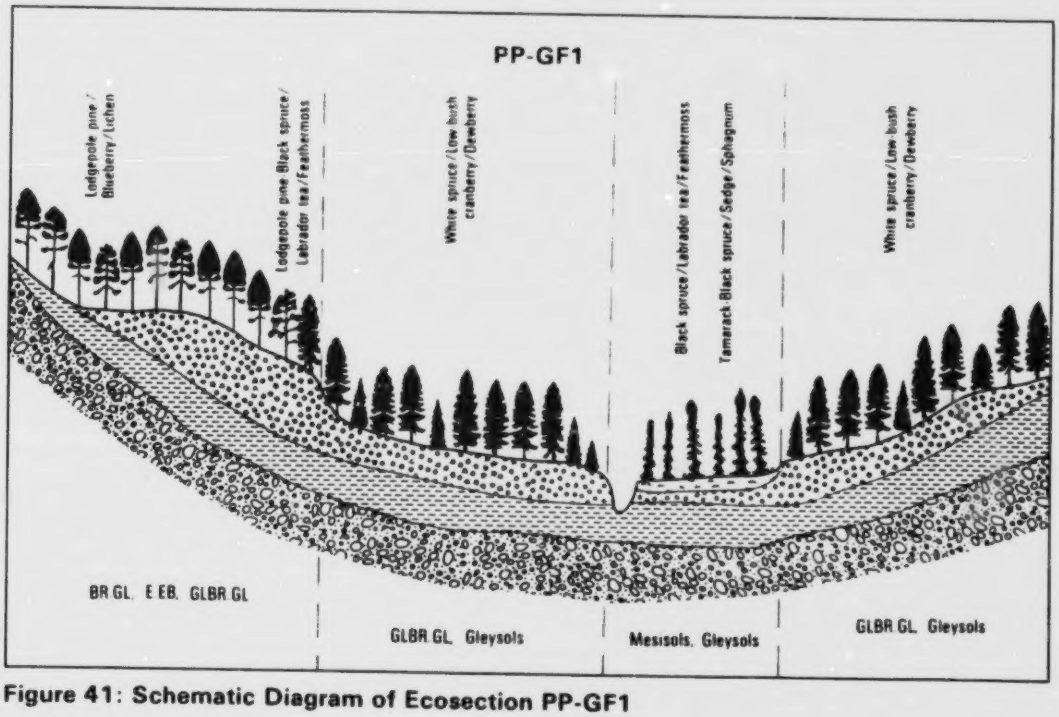

PP-GF1
Lodgepole pine/Blueberry/Lichen
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
White spruce/Low bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
Tamarack-Black spruce/Sedge/Sphagnum
White spruce/Low-bush cranberry/Dewberry
BR GL E EB GLBR GL
GLBR GL Gleysols
Mesisols, Gleysols
GLBR GL Gleysols

Figure 41: Schematic Diagram of Ecosection PP-GF1

PP-GFE1

Physical Conditions

This is a gently rolling glaciofluvial outwash plain on which coarse glaciofluvial sands are overlain by fine-textured aeolian sheets of variable thickness (Figure 42). Longitudinal dunes are found east of Nose Creek. Portions of this ecosection are underlain by either glciolacustrine sediments or Continental till. These fine textured materials are deep enough that they have minor influence on soil drainage, thus well to rapidly drained conditions predominate.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
Evb/GF	SiL/S/SCL	2-6	2 2-3	BR.GL	Aspen/Rose/Pea vine Aspen/Low-bush cranberry/Dewberry
GF	S/SCL	0-2	1-2	E.EB	Lodgepole pine/Blueberry/Lichen
E	SiL/S	2-9	1-2	E.EB	Aspen/Rose/Pea vine Lodgepole pine/Blueberry/Lichen

Ecoregion: Boreal Mixedwood

Ecological Conditions

Silty aeolian deposits ameliorate the dryness of coarse-glaciofluvial sand and allow aspen forest to dominate over most of the landscape. Lodgepole pine forest is only found on thick glaciofluvial outcrops and large dunes, where drainage is rapid.

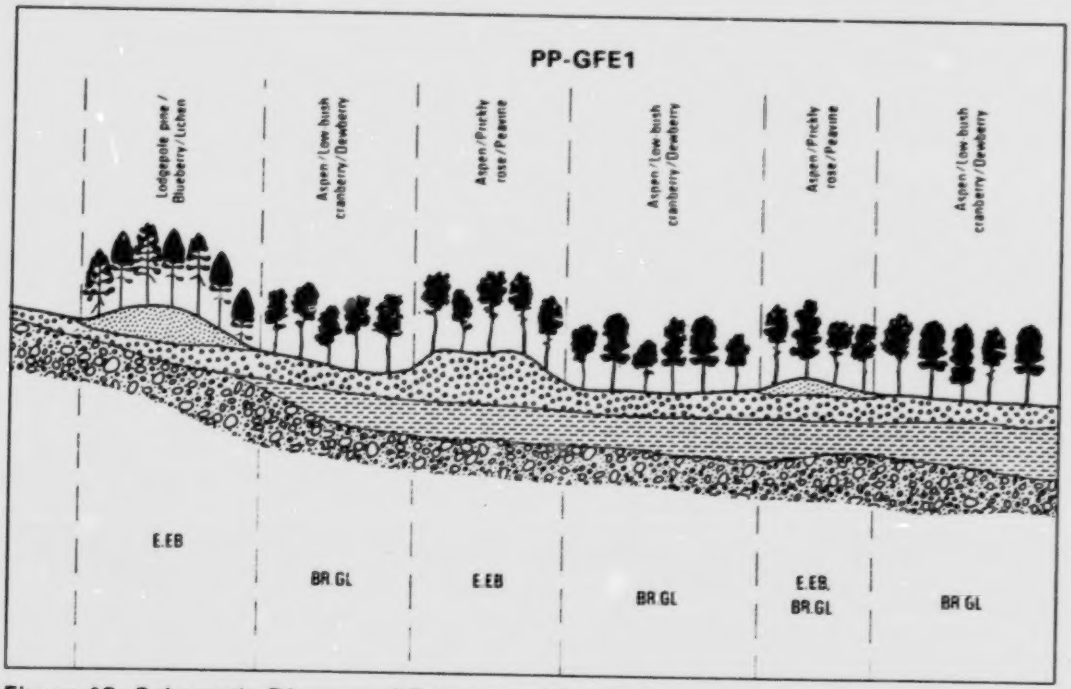

PP-GFE1
Lodgepole pine / Blueberry/Lichen
Aspen/Low bush cranberry/Dewberry
Aspen/Prickly rose/Peavine
Aspen/Low bush cranberry/Dewberry
Aspen/Prickly rose/Peavine
Aspen/Low bush cranberry/Dewberry
E.EB
BR.GL
E.EB
BR.GL
E.EB.
BR.GL
BR.GL

Figure 42: Schematic Diagram of Ecosection PP-GFE1

PP-GF01

Physical Conditions

This level to gently rolling glaciofluvial outwash plain occurs near the confluence of Nose Creek and the Wapiti River (Figure 43). Coarse-textured glaciofluvial sands and gravels are the principal surficial materials across much of this landscape. Adjacent to Nose Creek, glaciofluvial deposits tend to be finer-textured and this may be a result of numerous bank overflow episodes.

Accumulations of sedge and sphagnum peat occur locally and account for approximately 35-40% of the area. Organic accumulations are underlain by fine-textured glaciolacustrine backwater sediments in depressional areas adjacent to NB-MC1 and in glacial meltwater channels. Minor occurrences of eolian veneers occur east of Nose Creek.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GF	gS/SCL	0-9	1-3	E.EB, E.DYB, BR.GL	Lodgepole pine/Feathermoss
Ovb/GL	Mesic/SCL/CL	0-2	5-6	Peaty Gleysols, Mesi-	Black spruce/Labrador tea/Feathermoss Larch/Black spruce/Sedge/Sphagnum

Ecological Conditions:

Coniferous forest dominates on this landscape because of the extremes of moisture availabiilty produced by deposition of glaciofluvial sands. Well drained uplands support lodgepole pine forest, while open black spruce forest and sedge meadows are found on poorly drained lowlands.

Finer-textured materials in adjacent ecosections with similar topography support mixed deciduous-coniferous forest.

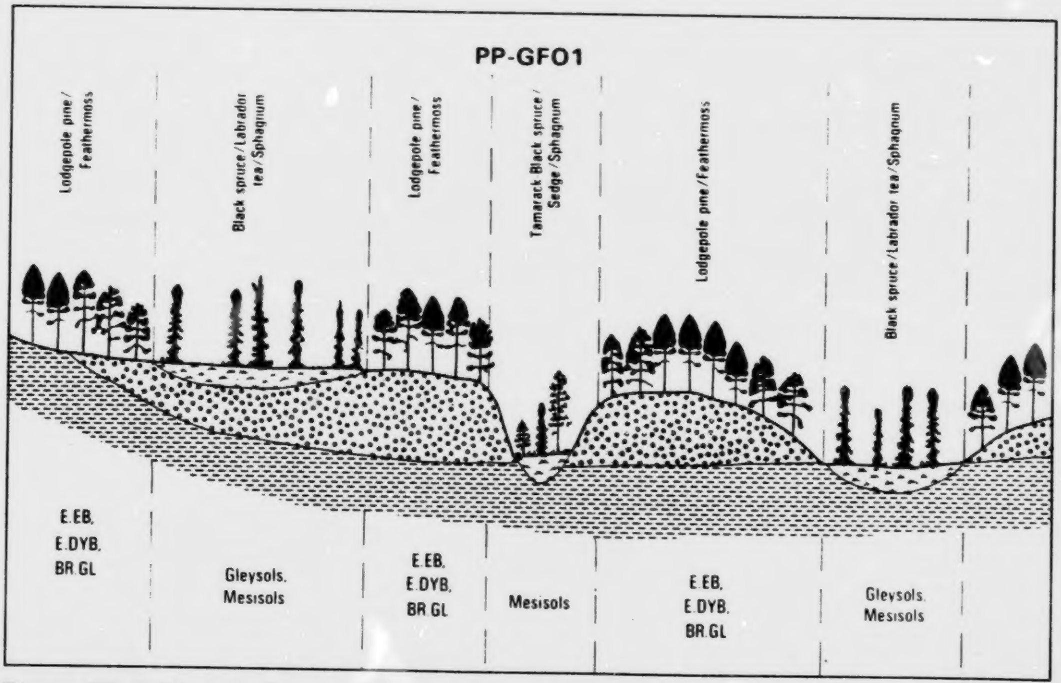

PP-GFO1
Lodgepole pine/ Feathermoss
Black spruce/Labrador tea/Sphagnum
Lodgepole pine/ Feathermoss
Tamarack Black spruce/ Sedge/Sphagnum
Lodgepole pine/Feathermoss
Black spruce/Labrador tea/Sphagnum
E.EB, E.DYB, BR.GL
Gleysols, Mesisols
E.EB, E.DYB, BR.GL
Mesisols
E.EB, E.DYB, BR.GL
Gleysols, Mesisols

Figure 43: Schematic Diagram of Ecosection PP-GFO1

PP-GL1

Physical Conditions

These level to gently undulating glaciolacustrine terraces (Figure 44) border the middle and lower reaches of Muddy, Little Muddy and Sandbar Creeks, as well as the middle reaches of Nose Creek. They are possibly the result of ice damming within the Nose Creek valley which created a short-lived glacial lake. Thin glaciofluvial veneers as well as fluvial veneers occur locally.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL, $\frac{\text{GFv}}{\text{GL}}$	SiC/CL	0-6	2-4	O.GL, BR.GL, GL.GL, GLBR.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla
$\frac{\text{Ov}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	White spruce/Common horsetail

Ecoregion: Boreal Foothills

Ecological Conditions

Seepage on slopes and coarse-textured materials adjacent to creek valleys separate the vegetation into two components. Deciduous aspen and aspen-balsam poplar forest is found on slopes, with white spruce stands in the lower portion of seepage tracks. Glaciofluvial deposits adjacent to creeks are coarse-textured enough that drought is significant; lodgepole pine forest is found on these deposits.

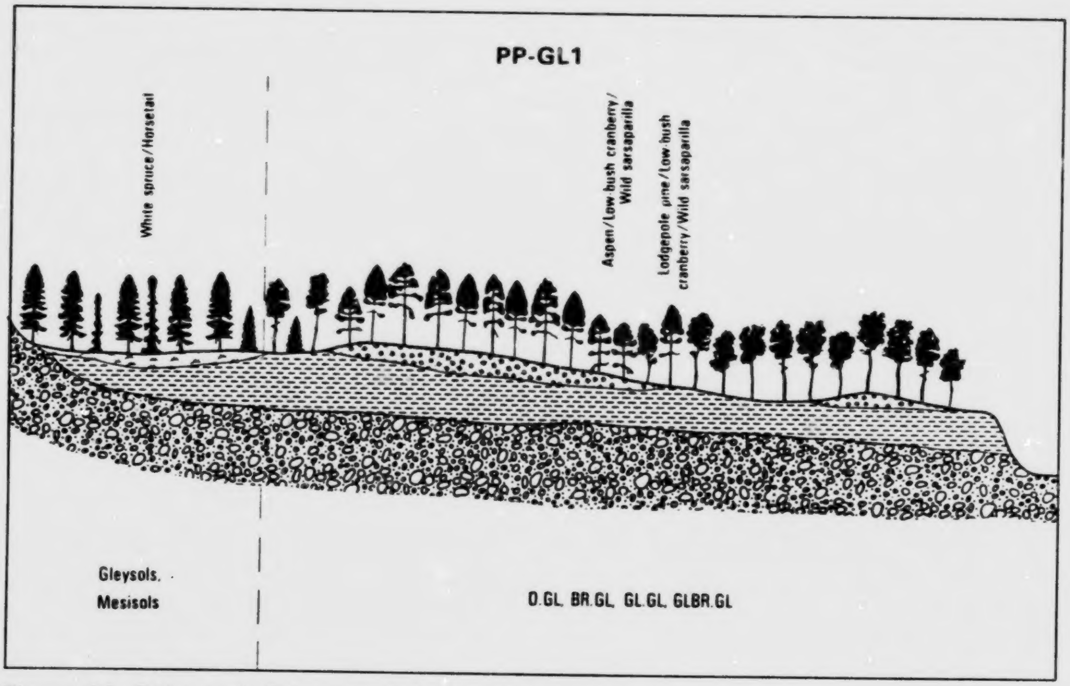

PP-GL1
White spruce/Horsetail
Aspen/Low-bush cranberry/ Wild sarsaparilla
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Gleysols, Mesisols
O.GL, BR.GL, GL.GL, GLBR.GL

Figure 44: Schematic Diagram of Ecosection PP-GL1

PP-GL2

Physical Conditions

This landscape is a level to very gently sloping glaciolacustrine basin (Figure 45) drained by Stoney Creek and an unnamed tributary of Pinto Creek. Glaciolacustrine sediments of former Glacial Lake Peace are the principal deposits and tend to be imperfectly to poorly drained.

Extensive deposits of sedge and sphagnum peats have developed on level terrain. On upper slopes within the basin coarse-textured glaciofluvial and/or eolian veneers commonly overlie glaciolacustrine sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
Ovb/GL	Mesic/CL	0-2	6	Mesisols	Larch-Black spruce/Sedge/Sphagnum
GFv/Ev/GL	SiL/CL	0-2	1-3	O.GL, GL.GL	Lodgepole pine/Blueberry/Lichen Black spruce-Lodgepole pine/Feathermoss
GL			4-5	Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss Larch-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions

Muskeg dominated by dwarf birch and black spruce covers most of these poorly drained valleys. The slight elevation of glaciofluvial deposits in the upper part of these valleys creates dry conditions that support lodgepole pine forest.

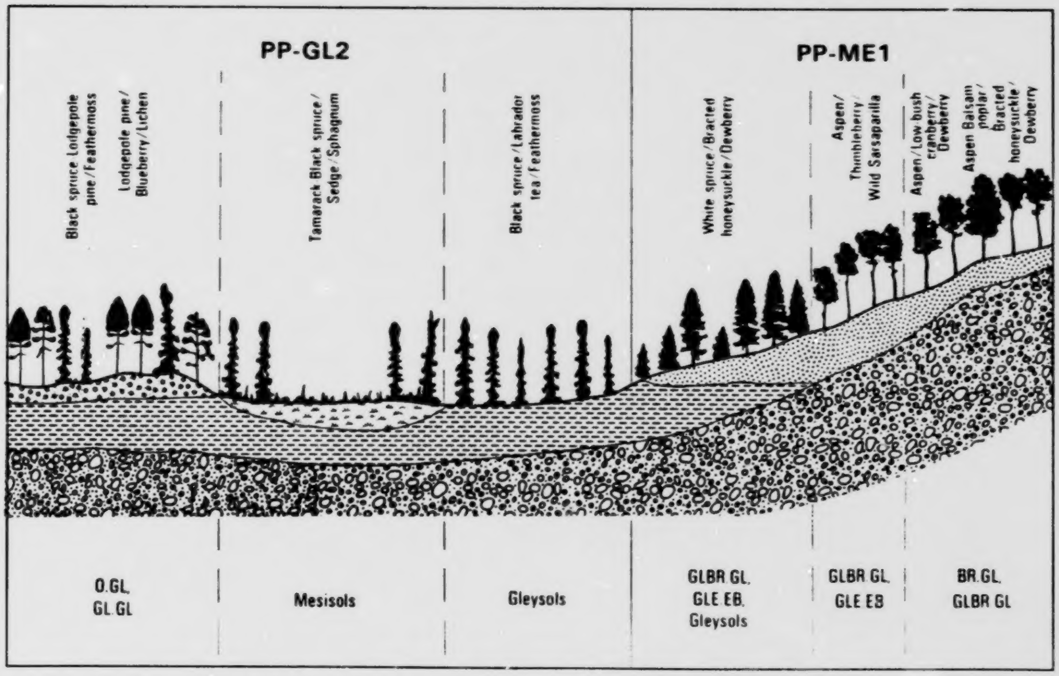

PP-GL2
PP-ME1
Black spruce Lodgepole pine/Feathermoss
Lodgepole pine/Blueberry/Lichen
Tamarack Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
White spruce/Bracted honeysuckle/Dewberry
Aspen/Thimbleberry/Wild Sarsaparilla
Aspen/Low bush cranberry/Dewberry
Aspen Balsam poplar/Bracted honeysuckle/Dewberry
O.GL
GL.GL
Mesisols
Gleysols
GLBR.GL
GLE.EB
Gleysols
GLBR.GL
GLE.EB
BR.GL
GLBR.GL

Figure 45: Schematic Diagram of Ecosections PP-GL2 and PP-ME1

PP-GL3

Physical Conditions

This undulating to gently rolling glaciolacustrine basin (Figure 46) is now occupied by the upper reaches of Pinto Creek and consists chiefly of reworked, fine-textured glaciolacustrine sediments with a moderate stone content. Imperfectly drained conditions predominate due to pronounced groundwater discharge from the adjacent Cutbank Benchlands (CB-M1) combined with the slowly permeable glaciolacustrine materials. Thin glaciofluvial veneers and several small eskers occur in the upper portion of this system. Organic accumulations of sphagnum peat occur sporadically at the base of slopes. The entire ecosection is underlain by moderately fine-textured Continental tills.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL, $\frac{\text{GLvb}}{\text{M}}$	$\frac{\text{CL}}{\text{SiCL}}$	0-2	3-4	O.GL, SZ.GL, GL.GL, GLSZ.GL	Aspen-balsam poplar/Bracted honeysuckle/ Dewberry Aspen/Lowbush cranberry/Dewberry
$\frac{\text{GFv}}{\text{GL}}$	$\frac{\text{SiL}}{\text{CL}}$	2-5	2	E.EB, BR.GL	Lodgepole pine-Feathermoss
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss Larch-Black spruce/Sedge/Sphagnum

Ecoregion: Boreal Mixedwood

Ecological Conditions

Soil conditions are somewhat drier on the floor of this basin compared to PP-GL2. Aspen and aspen-balsam poplar forest covers about half of the landscape. Black spruce forest and shrubby muskeg occur at the base of slopes where groundwater stagnates, and lodgepole pine forest is found on silty glaciofluvial deposits near the headwaters of Pinto Creek.

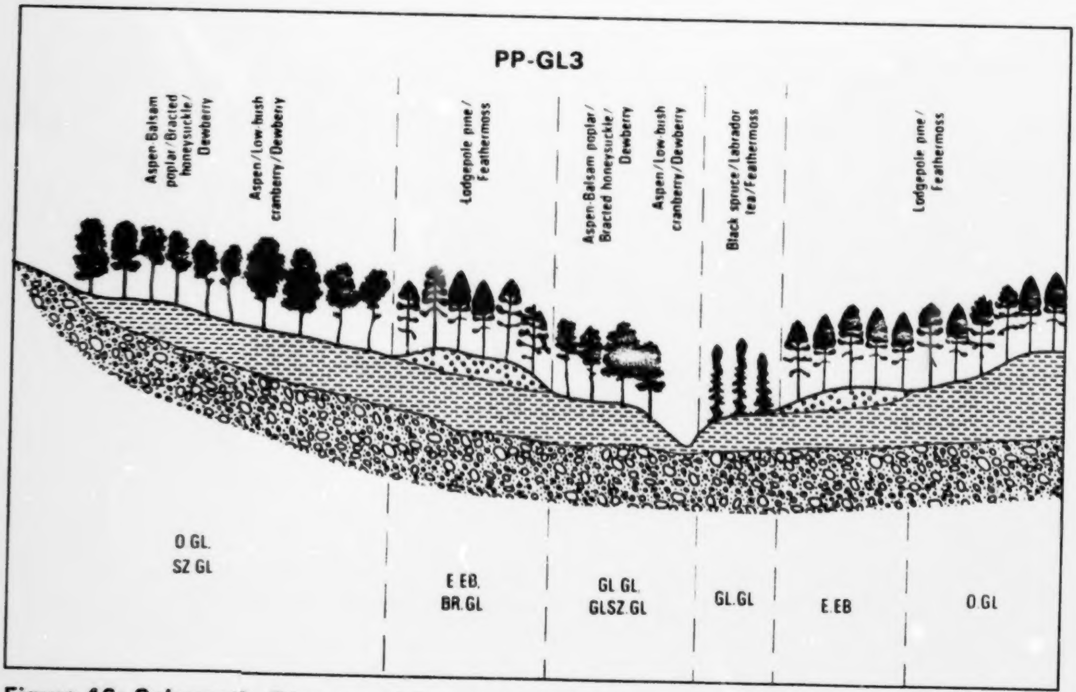

PP-GL3
Aspen-Balsam poplar/Bracted honeysuckle/ Dewberry
Aspen/Low-bush cranberry/Dewberry
Lodgepole pine/ Feathermoss
Aspen-Balsam poplar/ Bracted honeysuckle/ Dewberry
Aspen/Low-bush cranberry/Dewberry
Black spruce/Labrador tea/Feathermoss
Lodgepole pine/ Feathermoss
O GL. SZ GL
E EB. BR.GL
GL GL. GLSZ.GL
GL.GL
E.EB
O.GL

Figure 46: Schematic Diagram of Ecosection PP-GL3

PP-M1

Physical Conditions:

This rolling to ridged till plain borders Bald Mountain Creek and is characterized by numerous flutings and small till covered ridges which are oriented in a southeast-northwest direction (Figure 47). Local glaciolacustrine sediments which occur between the fluting features suggest that water backed up into these areas creating numerous small islands.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
M	SiCL/CL	2-30	2-4	O.GL, GL.GL	Aspen/Low-bush cranberry/Dewberry Aspen-Balsam poplar/Bracted honeysuckle/ Dewberry White spruce/Bracted honeysuckle/Dewberry
$\frac{\text{GLv}}{\text{M}}$	$\frac{\text{CL}}{\text{SiCL}}$	2-5	4-5	GLSZ.GL, GL.GL,	Aspen/Balsam poplar/Bracted honeysuckle/ Dewberry White spruce/Bracted honeysuckle/Dewberry Black spruce/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions

Aspen forest covers most of the landscape with stands of aspen-balsam poplar and white spruce found on the lower side slopes of the larger ridges. Small patches of black spruce forest and willow shrubland occur in poorly drained areas between ridges and along stream courses.

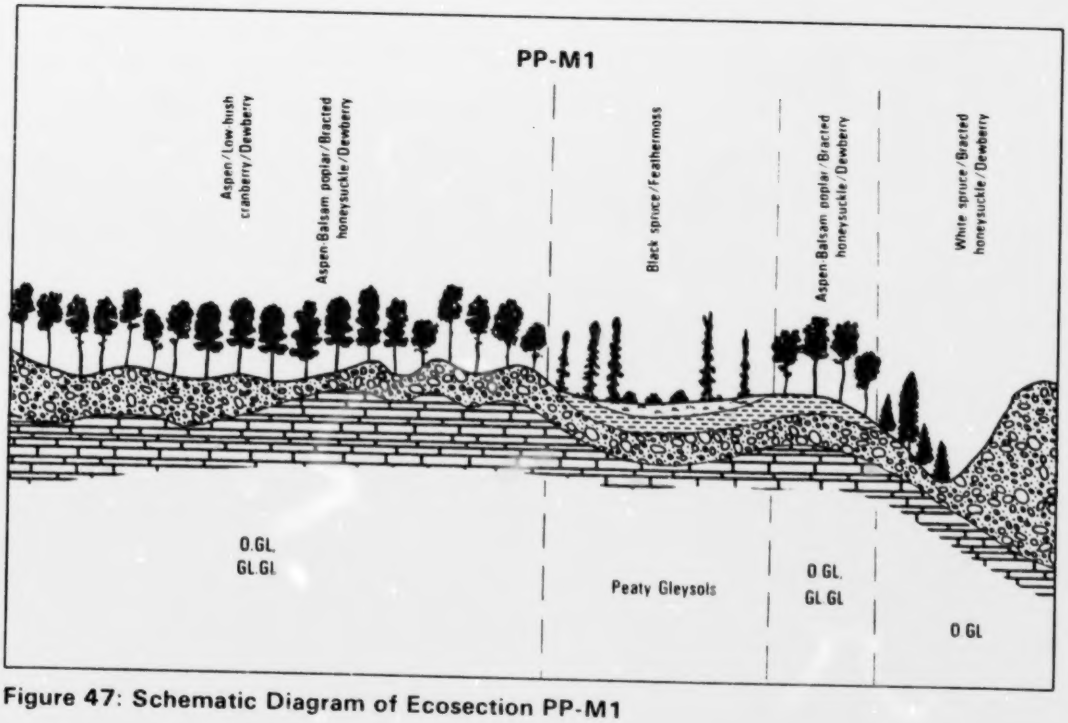

PP-M1
Aspen/Low-bush cranberry/Dewberry
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
Black spruce/Feathermoss
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
White spruce/Bracted honeysuckle/Dewberry
O.GL, GL.GL
Peaty Gleysols
O.GL, GL.GL
O.GL

Figure 47: Schematic Diagram of Ecosection PP-M1

Physical Conditions

This system is a series of subdued northeast-southwest trending bedrock ridges covered with moderately fine-textured pitted moraine (Figure 48). These ridges, which occur in the northernmost part of the Pinto Plain, are separated by Diamond Dick, Calahoo and Sylvester Creeks. Imperfectly drained conditions are associated with depressional terrain in the uplands and glaciofluvial veneers on lower side slope positions. Glaciofluvial veneers are common adjacent to these creek valleys. Below 820 m, thin glaciolacustrine sediments of Glacial Lake Peace origin commonly overlie till deposits.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
M	SiCL	2-15	2-3	O.GL, BR.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla
			4	G.GL	White spruce/Low-bush cranberry/Dewberry
GFv/M	CL/SiCL	2-9	3-4	O.GL, GL.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills
Boreal Mixedwood

Ecological Conditions

A mixedwood forest of lodgepole pine and aspen occurs at higher elevations on these well-drained ridges, while aspen forest grows at lower elevations. Mature spruce stands are found in depressional terrain on uplands where more soil moisture is available.

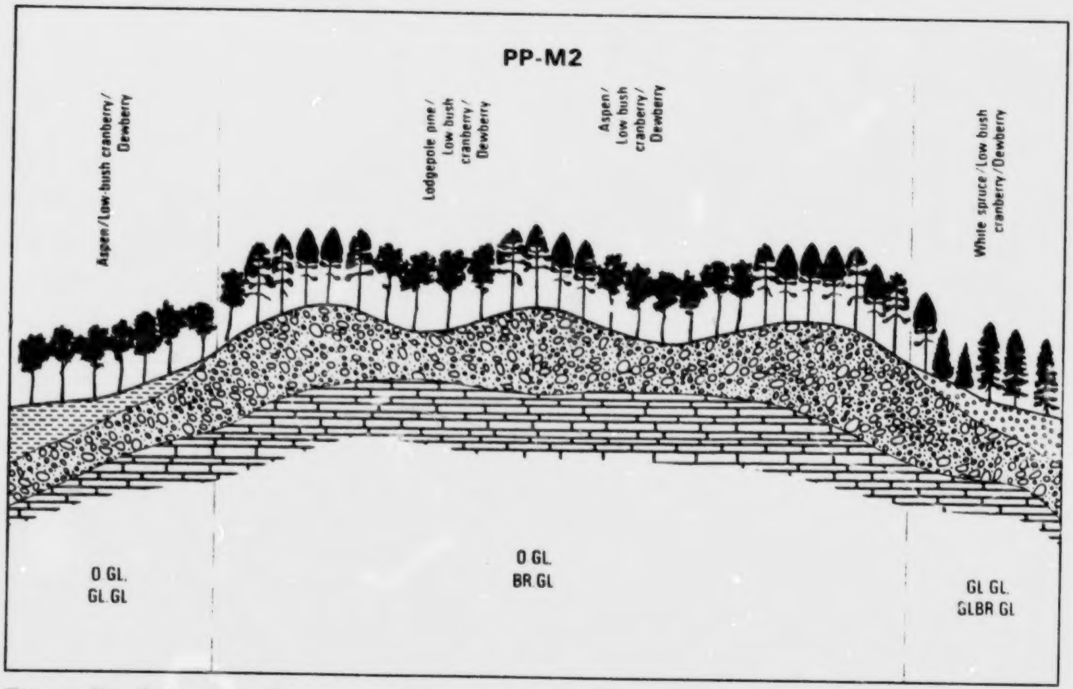

PP-M2
Aspen/Low-bush cranberry/Dewberry
Lodgepole pine/Low bush cranberry/Dewberry
Aspen/Low bush cranberry/Dewberry
White spruce/Low bush cranberry/Dewberry
O GL.
GL GL
O GL.
BR GL
GL GL.
GLBR GL

Figure 48: Schematic Diagram of Ecosection PP-M2

PP-ME1

Physical Conditions

Moderately fine-textured Continental tills mantling an inclined to gently rolling bedrock ridge makes up the system (Figure 45). These till deposits in turn are overlain by eolian veneers and blankets which may have been derived from reworked glaciofluvial silts and sands from the Pinto Creek area. Eolian materials vary in thickness from 1-2 m on lower slope positions to 0.5 - 1 m on upper slope positions. Pronounced seepage occurs along the interface between eolian materials and the underlying till deposits. Gleysols have developed on level to depressional terrain at upper elevations where finer-textured tills and impermeable bedrock impede percolation of groundwater.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
$\frac{\text{Evb}}{\text{M}}$	$\frac{\text{Si/SiL}}{\text{SiCL}}$	0-9	2-3	BR.GL	Aspen/Low-bush cranberry/Dewberry
			3-4	BR.GL, E.EB, GLBR.GL, GLE.EB	Aspen/Balsam poplar/Bracted honeysuckle/ Dewberry
			4-5	GLBR.GL GLE.EB Gleysols	Aspen/Thimbleberry/Wild sarsaparilla White spruce/Bracted honeysuckle/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions

Seepage offsets the dryness of coarse-textured veneers and allows aspen and aspen-balsam poplar forest to cover this landscape. Shrub understories are rich and diverse because of the favorable moisture regime.

PP-01

Physical Conditions

These nearly level to depressional topographic features are occupied by poorly to very poorly drained bogs and transitional fens (Figure 49). Occurring throughout the Pinto Plain, these organic accumulations of sedge and sphagnum peat are underlain by a combination of moderately-fine to fine-textured glaciolacustrine sediments and Continental tills.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
O	Mesic	0-2	5-6	Mesisols	Larch-Black spruce/Sedge/Sphagnum
Ovb/GL	Mesic/GL	0-2	5-6	Mesisols, Peaty Gleysols	Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions

The pattern of vegetation is controlled by depth of the water table. Open black spruce covers most of the landscape in slightly elevated peat deposits. Open shrubby fen vegetation with scattered larch occurs along channels where moving groundwater is close to the surface.

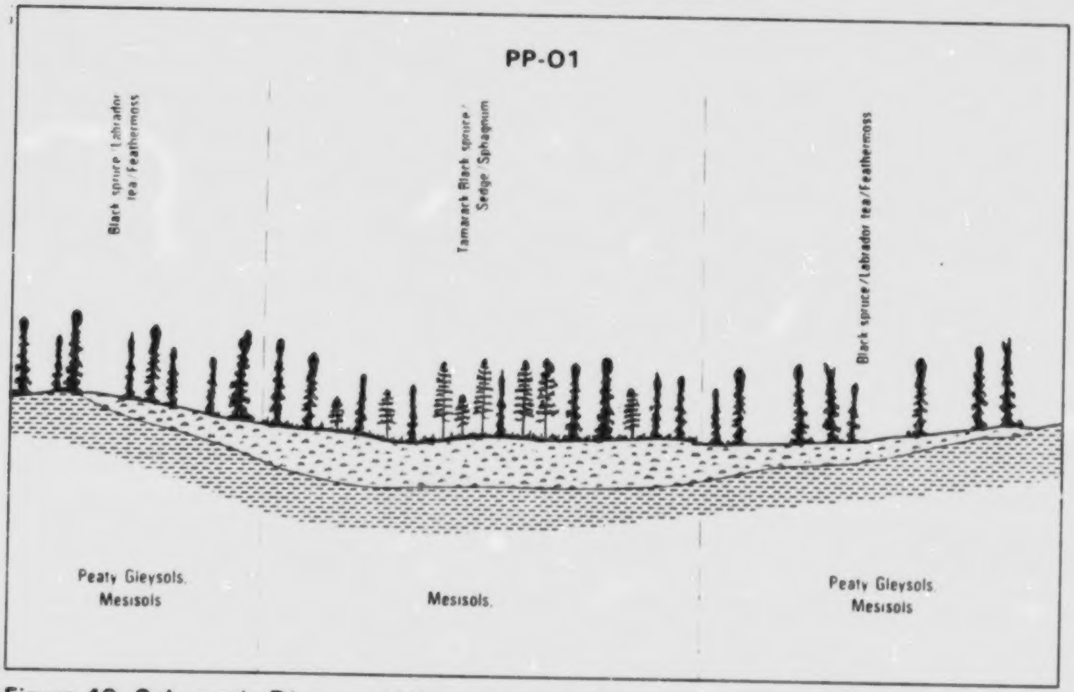

PP-O1
Black spruce/Labrador tea/Feathermoss
Tamarack/Black spruce/Sedge/Sphagnum
Black spruce/Labrador tea/Feathermoss
Peaty Gleysols, Mesisols
Mesisols
Peaty Gleysols, Mesisols

Figure 49: Schematic Diagram of Ecosection PP-O1

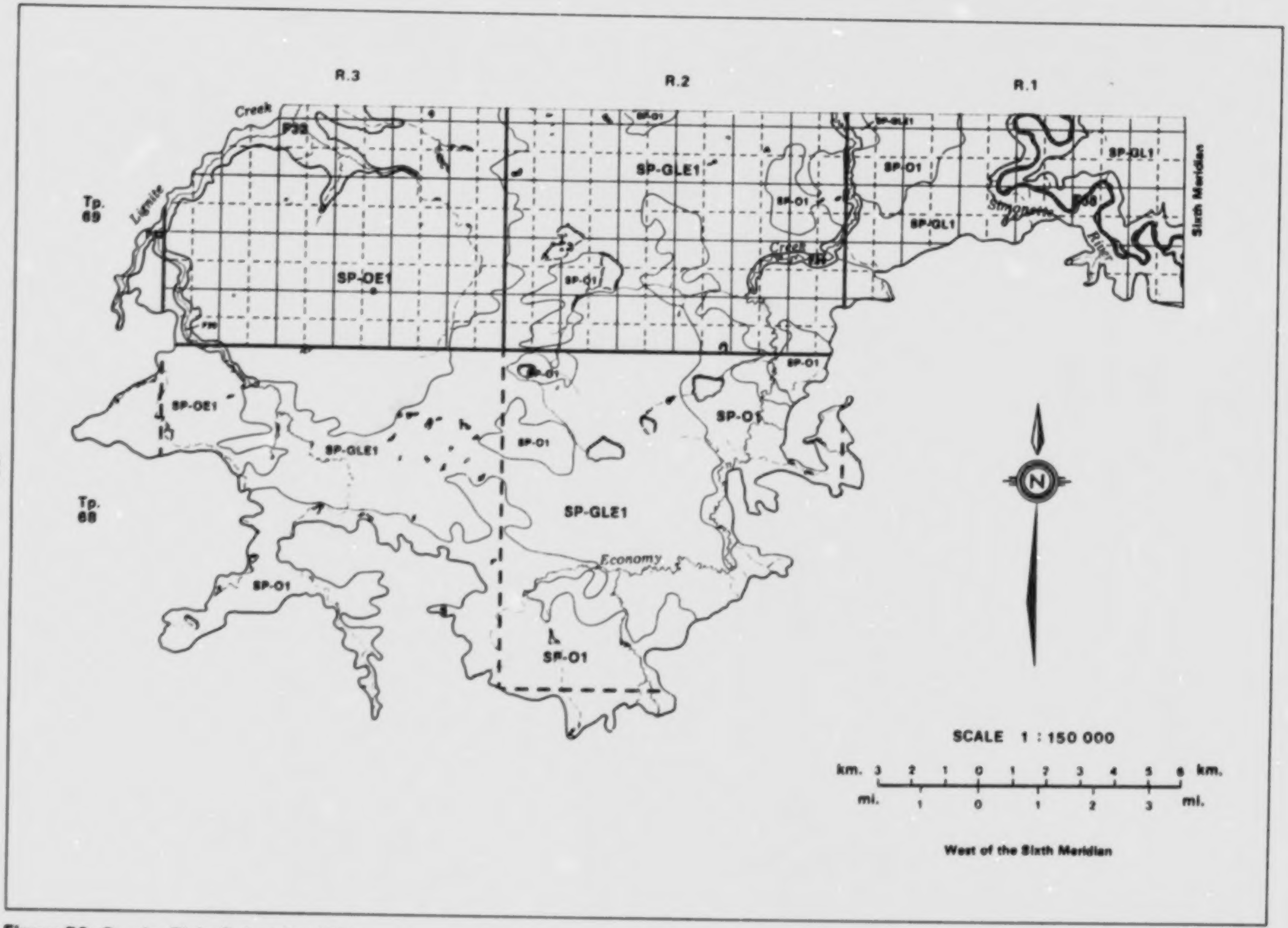
2.1.6 Smoky Plain Subregion (Ecodistrict)

Found in the northeastern portion of the study area (Figure 50) the Smoky Plain consists of a depressional to undulating glaciolacustrine plain. The bedrock, which is marked by thick surficial materials, is of the Wapiti Formation and is exposed locally within the deeply incised valleys of both the Simonette River and Lignite Creek. Across the subdued landscape, variations in elevation are minor with ranges of 625 m to 715 m on upland areas and 545 m to 640 m within the stream valleys. The subregions fall within the Boreal Mixedwood ecoregion, however, the vegetation is largely influenced by edaphic factors rather than regional climate.

Much of the area is characterized by large organic-eolian dune complexes. The thick organic deposits are dominated by wetland vegetation which consists of black spruce and sedge communities.

The eolian deposits which have been derived from reworked glaciofluvial outwash and deltaic materials are generally found in association with other surficial materials. Vegetation on these eolian materials consists of both aspen and lodgepole pine forests. Balsam poplar is also present where drainage is impeded.

Throughout the subregion significant amounts of glaciolacustrine sediments occur on higher positions in the landscape. Often these deposits are overlain by veneers of glaciofluvial sediments. Vegetation in these locations consists of a mixture of aspen/balsam poplar forests and black spruce.



R.3
R.2
R.1
Tp. 69
Tp. 68
Creek
Lignite
P32
SP-OE1
SP-GLE1
SP-O1
SP-GL1
Simonette
River
Creek
Economy
SP-OE1
SP-GLE1
SP-O1
SP-GLE1
SP-O1
SP-O1
Sixth Meridian
N
SCALE 1 : 150 000
km. 3 2 1 0 1 2 3 4 5 6 km.
mi. 1 0 1 2 3 mi.
West of the Sixth Meridian

Figure 50: Smoky Plain Subregion (SP)

The subregion has been divided into four ecosections/systems. Landform, parent materials and vegetation found in each are displayed in Table 12. Detailed descriptions with accompanying schematic diagrams follow the table.

The Smoky Plain has three fluvial systems which were identified (F32, F38, F39). These are discussed in Section 2.5 of Volume I.

Table 12

ECOSECTIONS/SYSTEMS OF THE SMOKY PLAIN

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
SP-GL1	Gently undulating plain	Glaciolacustrine clay loam with overlays of silt and peat	Aspen, balsam poplar and open black spruce forest
SP-GLE1	Gently undulating plain	Glaciolacustrine clay with overlays of sand and peat	Aspen, balsam poplar and black spruce forest
SP-O1	Depressional fens	Peat and silt over glaciolacustrine clay	Shrubby and treed muskeg, aspen and balsam poplar forest
SP-OE1	Level dune field	Peat and eolian sand	Sedge meadows, shrublands and open jackpine forest

SP-GL1

Physical Conditions

This nearly level to gently undulating glaciolacustrine plain (Figure 51) is dissected by the Simonette River. These fine-textured, imperfectly to poorly drained sediments are overlain by thin veneers of glaciofluvial and eolian materials. Small organic accumulations have developed through infilling of small ponds.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
GL	SiCL-CL	0-2	4-5	GL.GL, GLSZ.GL, Gleysols	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
GFv, Ev	$\frac{\text{Si}}{\text{CL}}$	0-2	3-4	O.GL, GL.GL	Aspen/Low-bush cranberry/Dewberry
$\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions:

An abundance of soil moisture causes aspen-balsam poplar forest to predominate on these very gentle slopes. Pure stands of aspen are found adjacent to the valley of the Simonette River, where steep slopes improve drainage. Peat-filled depressions have dense shrub cover and an open canopy of black spruce.

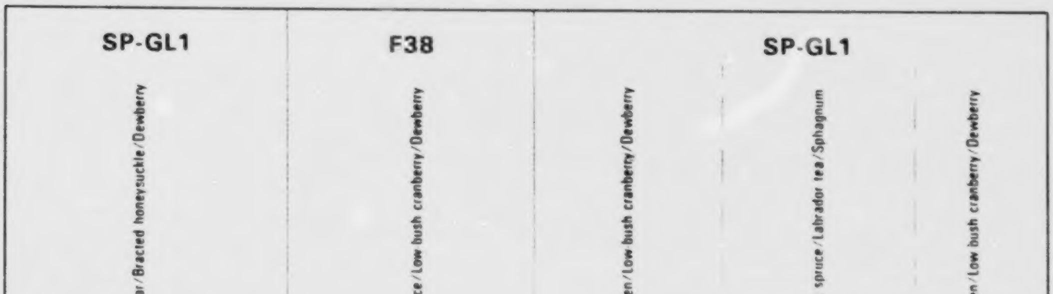

SP-GL1
F38
SP-GL1
Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
White spruce/Low bush cranberry/Dewberry
Aspen/Low bush cranberry/Dewberry
Black spruce/Labrador tea/Sphagnum
Aspen/Low bush cranberry/Dewberry
GL.GL,
GLSZ.GL
Brunisols,
CU.R
GL.GL,
GLSZ.GL
Gleysols,
Mesisols
GL.GL,
GLSZ.GL

Figure 51: Schematic Diagram of Ecosections SP-GL1 and F38

SP-GLE1

Physical Conditions

This gently undulating glaciolacustrine plain (Figure 52) occurs between Lignite and Economy Creeks. Moderately fine to fine-textured glaciolacustrine sediments are mantled by eolian deposits of variable thicknesses. These include veneers, blankets and parabolic dunes. Scattered deposits of organics can also be found in areas between the dunes and other low-lying areas.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
E, $\frac{Eb}{GL}$	$\frac{S/Si}{C/CL}$	2-15	2	E.EB	Aspen/Rose/Pea vine
$\frac{Ev}{GL}$	$\frac{Si/S}{C/CL}$	0-2	2-3	BR.GL	Aspen/Low-bush cranberry/Dewberry-Balsam poplar
			4	GLBR.GL	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry
GL, $\frac{Ov}{GL}$	C/CL	0-2	5	Gleysols	Black spruce/Labrador tea/Feathermoss

Ecoregion: Boreal Mixedwood

Ecological Conditions

Aspen forest covers most of this landscape, with its composition reflecting the thickness of sand deposits and soil drainage conditions. Low-lying terrain supports aspen-balsam poplar forest and a variety of shrubland communities dominated by willow, paper birch, white and black spruce and marsh reedgrass.

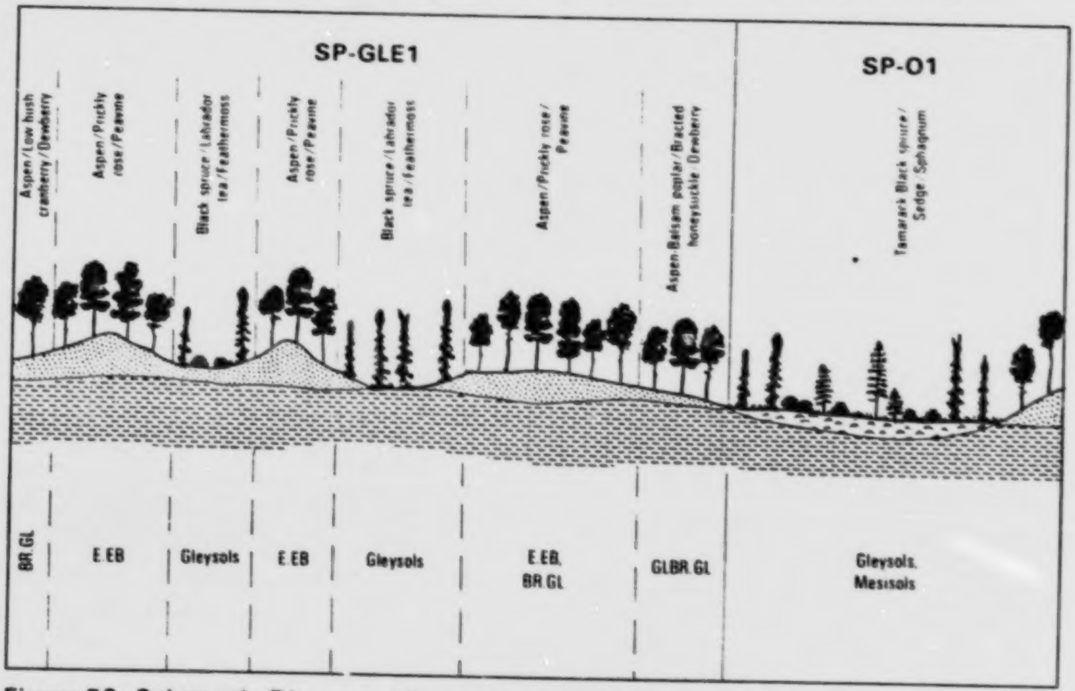

SP-GLE1
SP-O1
Aspen/Low bush cranberry/Dewberry
Aspen/Prickly rose/Peavine
Black spruce/Labrador tea/Feathermoss
Aspen/Prickly rose/Peavine
Black spruce/Labrador tea/Feathermoss
Aspen/Prickly rose/Peavine
Aspen-Balsam poplar/Bracted honeysuckle Dewberry
Tamarack Black spruce/Sedge Sphagnum
BR.GL
E.EB
Gleysols
E.EB
Gleysols
E.EB, BR.GL
GLBR.GL
Gleysols, Mesisols

Figure 52: Schematic Diagram of Ecosections SP-GLE1 and SP-O1

SP-01

Physical Conditions

Scattered across the Smoky Plain, this system consists of a complex of organic fens (Figure 52) which have developed in depressional terrain and subdued meltwater channels. These deposits do not appear to be of great depth and are underlain by fine-textured, slowly permeable glaciolacustrine sediments. Also occurring across the system are small areas of glaciofluvial and eolian veneers overlying glaciolacustrine sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
O, Ob GL	Mesic CL	0-2	6	Mesisols	Tamarack-Black spruce/Sphagnum
Ov GL	Mesic CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Labrador tea/Feathermoss
GFv/Ev GL	Si CL	0-2	3-4	O.GL, GL.GL	Aspen-Balsam poplar/Bracted honeysuckle/Dewberry

Ecoregion: Boreal Mixedwood

Ecological Conditions:

The vegetation pattern reflects an excess of soil moisture, with an open fen vegetation of sedges, willow and tamarack occurring in subdued glacial meltwater channels and around ponds. Black spruce forest is found in the headwater areas of meltwater channels where there is a slight improvement in drainage. Elevated deposits of glaciofluvial and aeolian silt present the driest environment and support aspen-balsam poplar forest.

SP-OE1

Physical Conditions:

Found in the vicinity of and east of Lignite Creek, this system consists of a complex of extensive accumulations of sedge and sphagnum peats and prominent parabolic dunes (Figure 53). The entire system is underlain at depth by fine-textured slowly permeable glaciolacustrine sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
O, $\frac{\text{Ob}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{CL}}$	0-2	6	Mesisols	Larch-Black spruce/Sedge/Sphagnum
E	S	2-15	1-2	E.EB	Lodgepole pine/Blueberry/Lichen

Ecoregion: Boreal Mixedwood

Ecological Conditions:

Excessive moisture characterizes most of this landscape on which open wetland vegetation of sedges, willow and large predominates. The rapidly-drained environment of large dunes supports open jackpine forest, whereas deciduous forest is found on thinner aeolian deposits that occur elsewhere in the subregion.

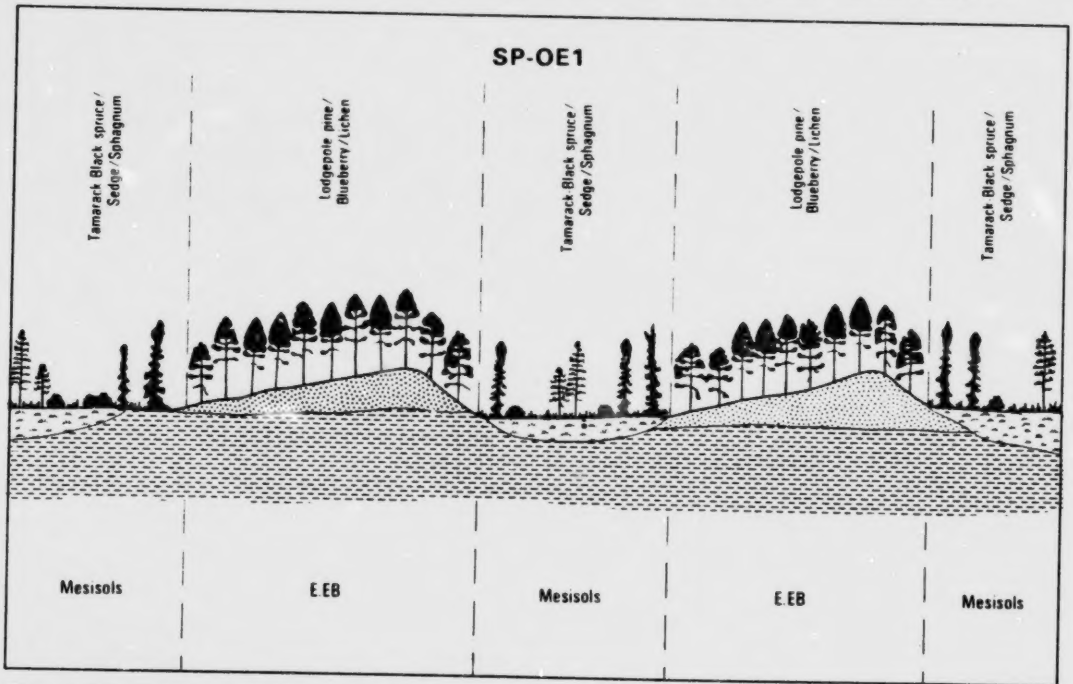

SP-OE1
Tamarack Black spruce/ Sedge/Sphagnum
Lodgepole pine/ Blueberry/Lichen
Tamarack Black spruce/ Sedge/Sphagnum
Lodgepole pine/ Blueberry/Lichen
Tamarack Black spruce/ Sedge/Sphagnum
Mesisols
E.EB
Mesisols
E.EB
Mesisols

Figure 53: Schematic Diagram of Ecosection SP-OE1

2.2 Western Alberta Plains Region

The Western Alberta Plains lies within the central portion of the study area between the Wapiti Plains and the Rocky Mountain Foothills Regions (Figure 7). Elevations range from 820 m within the Smoky River valley to 1 525 m atop Nose Mountain. Local relief is highly variable.

The region is underlain by gently dipping bedrock of the Paskapoo Formation. The Scollard Member which is part of this formation is very prone to slumping and outcrops along most of the major river valleys. Structural deformation is not common, however minor distortion of the bedrock occurs adjacent to the Rocky Mountain Foothills.

The general landscape of the region consists of an eroded benchland. It is characterized by gently undulating to rolling plateau remnants and strongly dissected, steep sided slopes. The landforms are bedrock controlled and overlain by surficial deposits of variable thickness.

Surficial materials of this region are a complex of both Cordilleran and Continental till. Where these deposits are thin, residual sandstone materials often predominate. Post glacial erosion has also resulted in heavily eroded slopes with colluvium materials very prominent. On the higher plateau remnants, a highly cemented pre-glacial gravel cap is also found. In addition, varied amounts of organic, glaciofluvial and fluvial materials are present.

The Western Alberta Plain lies within parts of the Boreal Foothills, Boreal Uplands and Subalpine ecoregions. This gives rise to a varied vegetation across the region. Aspen, white spruce and lodgepole pine forest are common on modal sites with other species occurring occasionally. The prominence of aspen decreases while lodgepole pine increases with increasing elevation.

The region has been subdivided into nine subregions/ecodistricts. Topography, surficial materials and vegetation within each subregion are shown in Table 13.

Table 13

MAJOR CHARACTERISTICS OF THE SUBREGIONS IN THE WESTERN ALBERTA PLAINS

SUBREGION	TOPOGRAPHY	SURFICIAL MATERIAL	VEGETATION
Cutbank Benchlands	Dissected side slopes and plateau remnants	Moraine, colluvium	Aspen, lodgepole pine, white spruce
Cutbank Plateau	Plateau remnants and dissected side slopes	Moraine, residual, colluvium	Lodgepole pine, white spruce, aspen, Engelmann x white spruce
Deep Valley Plateau	Tertiary pediment	Preglacial gravels, organic, colluvium	Black spruce, tamarack, lodgepole pine, white spruce
Kakwa Benchlands	Ridged upland	Moraine, residual, colluvium	Lodgepole pine, black spruce, aspen
Little Smoky Plain	Rolling plain and side slopes	Moraine, glaciofluvial veneers, organics	Lodgepole pine, black spruce
Little Smoky Valley	Glacial outwash channel	Glaciofluvial, organic, moraine	Black spruce, lodgepole pine
Narraway Benchlands	Rolling to fluted till plain	Moraine, colluvium, organic	Lodgepole pine, black spruce, white spruce, aspen
Simonette Benchlands	Rolling to ridged upland	Moraine, eolian	Aspen, white spruce, lodgepole pine
Simonette Uplands	Rolling to level plateau remnants with dissected side slopes	Moraine, residual colluvium	Aspen, lodgepole pine, white spruce, black spruce

*Note: Bedrock across the region is gently dipping strata of the Paskapoo Formation.

2.2.1 Cutbank Benchlands Subregion (Ecodistrict)

Found along the eastern edge of the Western Alberta Plains (Figure 54), the Cutbank Benchlands consists of a heavily dissected plateau remnant which is characterized by rolling ridges and eroded side slopes. The area is underlain by gently dipping bedrock of the Paskapoo Formation which is exposed along the valleys of the Cutbank, Kakwa and Wapiti Rivers and their tributaries.

With an increase in elevation from east to west (800 m to 1 220 m) the subregion includes portions of two ecoregions; the Boreal Foothills and Boreal Uplands.

Ground moraine of continental origin is the dominant surficial material and decreases in thickness from east to west. Aspen and lodgepole pine forests predominate on thicker deposits at lower elevations. A much stonier cordilleran till is found at higher elevations and lodgepole pine is found on modal sites where deposits are thin. Numerous fluting marks indicate that ice moved from the northwest to southeast across the subregion.

Along the major stream valleys and steep upper slopes, colluvium deposits are quite extensive. Oversteepening by downcutting streams, combined with mass wasting where soft bedrock of the Scollard Member is exposed, often creates unstable slopes. The vegetation pattern is greatly influenced by pronounced seepage and groundwater movements which are contributing to instability of materials. Aspen and white spruce forest with significant amounts of alder appear to be wide-spread with

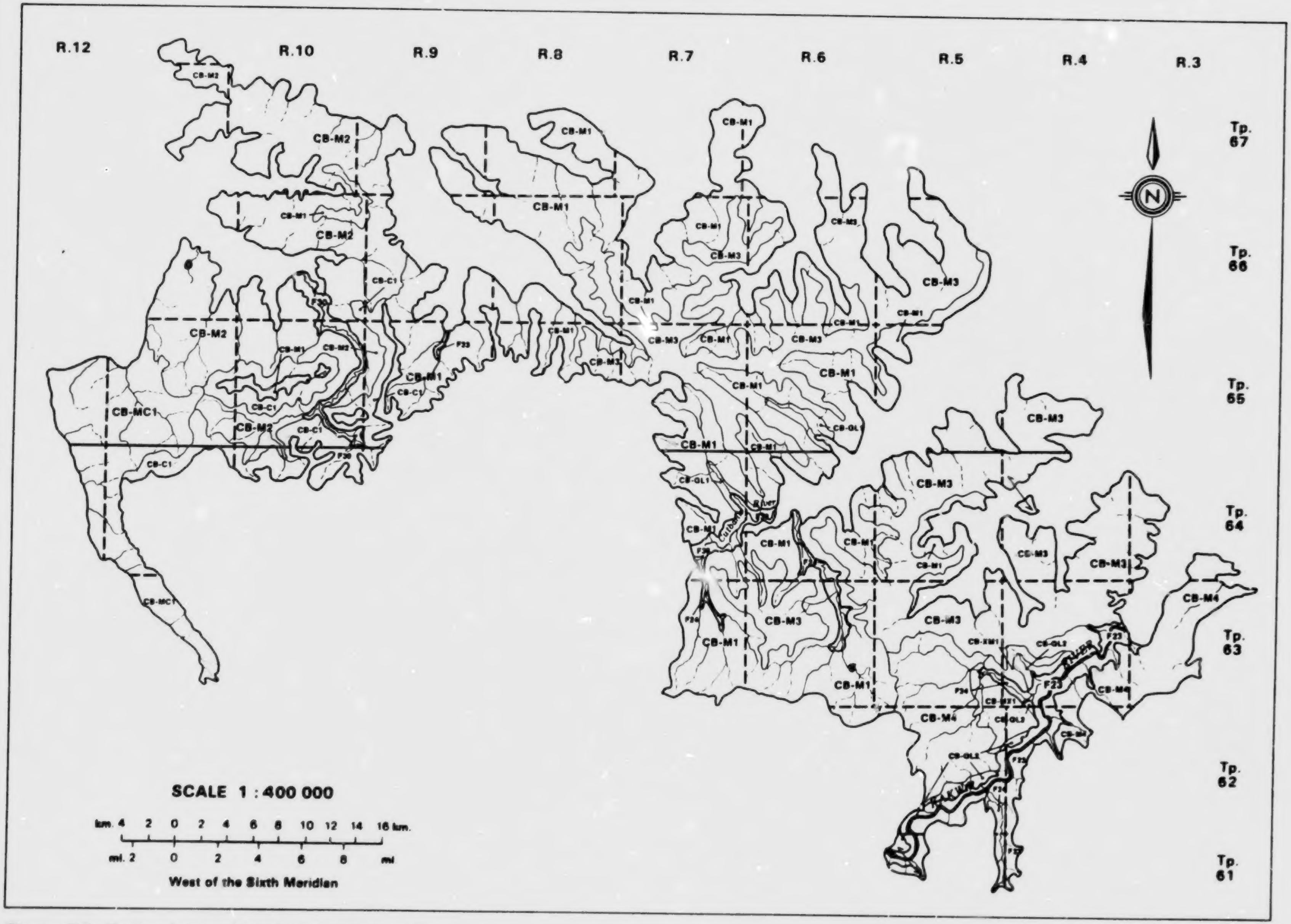

R.12
R.10
R.9
R.8
R.7
R.6
R.5
R.4
R.3
Tp. 67
Tp. 66
Tp. 65
Tp. 64
Tp. 63
Tp. 62
Tp. 61
N
CB-M2
CB-M1
CB-M3
CB-M4
CB-C1
CB-MC1
CB-OL1
CB-OL2
CB-XM1
F23
F24
F20
Cutbank River
Wapiti River
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi
West of the Sixth Meridian

Figure 54: Cutbank Benchlands Subregion (CB)

lodgepole pine forest at higher elevations on plateau remnants. Extensive, recently burned areas at lower elevations currently support dense seral shrubland dominated by willow and alder

The northern portion of the subregion contain relic shoreline features indicative of fluctuating levels of former glacial Lake Peace. Glaciolacustrine materials can also be found in these areas with a varied vegetation cover reflecting drainage and aspect. A mixture of aspen, white spruce, black spruce and lodgepole pine is common.

The Cutbank Benchland subregion is divided into ten systems/ecosections (Table 14) which reflect the complex nature of the landscape. Several fluvial systems occur across the subregion (F21, F23, F24, F30, F36), their characteristics are discussed in Section 2.5 of Volume I.

Table 14

SUMMARY OF THE ECOSECTIONS/SYSTEMS IN THE CUTBANK BENCHLANDS SUBREGION/ECODISTRICT

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
CB-C1	Steep, dissected slopes	Medium-textured colluvium	Lodgepole pine and white spruce forest
CB-GL1	Gently sloping tributary valleys	Glaciolacustrine clay with sandy overlays	Black spruce and black spruce-pine forest muskeg
CB-GL2	Undulating terraces	Thin peat over glaciolacustrine clay	Black spruce and black spruce-lodgepole pine forest
CB-M1	Steep-sided, dissected headwater valleys	Moderately fine-textured till	Aspen and white spruce and lodgepole pine forest
CB-M2	Undulating benchland	Moderately fine-textured till with sandy overlays	Aspen, lodgepole pine and white spruce forest
CB-M3	Gently undulating plateau	Medium to moderately fine-textured till	Lodgepole pine, aspen and white spruce forest
CB-M4	Rolling ridges	Moderately fine-textured till	Lodgepole pine, black spruce and white spruce forest
CB-MC1	Undulating benchlands and steep-sided valleys	Moderately fine-textured till and moderately coarse-textured colluvium	Lodgepole pine, aspen and white spruce forest
CB-MO1	Gently rolling ridges	Medium-textured continental till and thin peat	Lodgepole pine, white spruce and black spruce forest, muskeg
CB-MX1	Steep slopes	Thin, medium-textured till and colluvium	White spruce and aspen forest

CB-C1

Physical Conditions:

Representing the side slopes of a glacier carved valley (Figure 55), this moderate to steeply sloping system has subsequently been eroded by the headwater tributary streams of Muddy Creek. Extensive slumping occurs throughout this system as a result of the easily erodable bentonitic sandstones and shales which are interbedded within the underlying Paskapoo Formation. Surficial materials consist of colluvium derived from Continental tills deposited on the adjacent Cutbank Plateau and from locally weathered bedrock materials.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Cvb}}{\text{R}}$	SiCL/SL	31-45	2	O.R, O.DYB, E.DYB	Lodgepole pine/Alder/Dewberry/ Aspen/Buffaloberry/Showy aster
		16-30	2-4	E.EB, E.EB	White spruce/Low-bush cranberry/ Dewberry White spruce/Common horsetail Aspen/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla

Ecoregion: Boreal Uplands
Boreal Foothills

Ecological Conditions

The vegetation pattern reflects the influence of slope, aspect and seepage. Lodgepole pine forest occurs on neutral and northern exposures, with high cover of alder reflecting pronounced seepage along north-dipping bedrock strata. White spruce forest is found on lower slopes and in headwater valleys where seepage water concentrates. Dry southern exposures support aspen forest.

Large portions of this landscape have been burned. Generally favorable soil moisture has allowed dense willow and alder shrubland to develop on burned areas, and dense shrub cover has slowed forest succession.

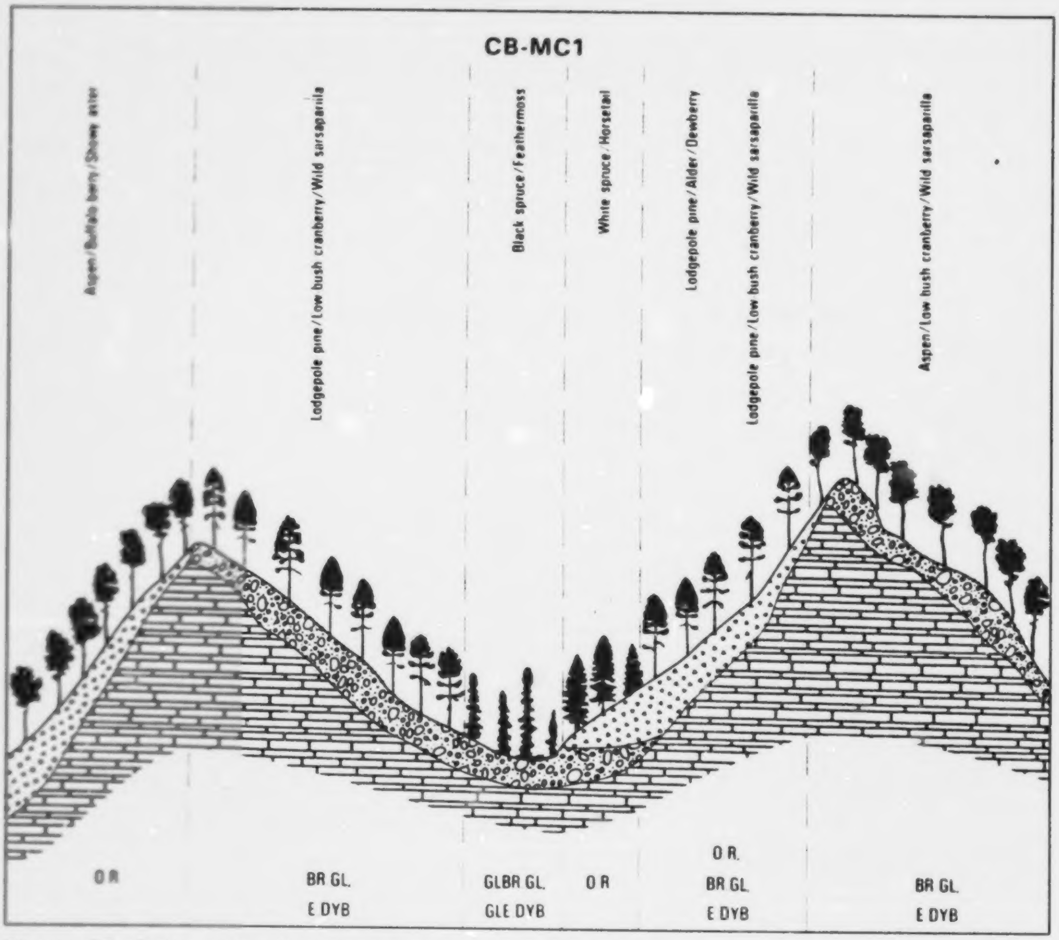

CB-MC1
Aspen/Buffalo berry/Showy aster
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Black spruce/Feathermoss
White spruce/Horsetail
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Aspen/Low bush cranberry/Wild sarsaparilla
O R
BR GL.
E DYB
GLBR GL.
GLE DYB
O R
O R.
BR GL.
E DYB
BR GL.
E DYB

Figure 62: Schematic Diagram of Ecosection CB-MC1

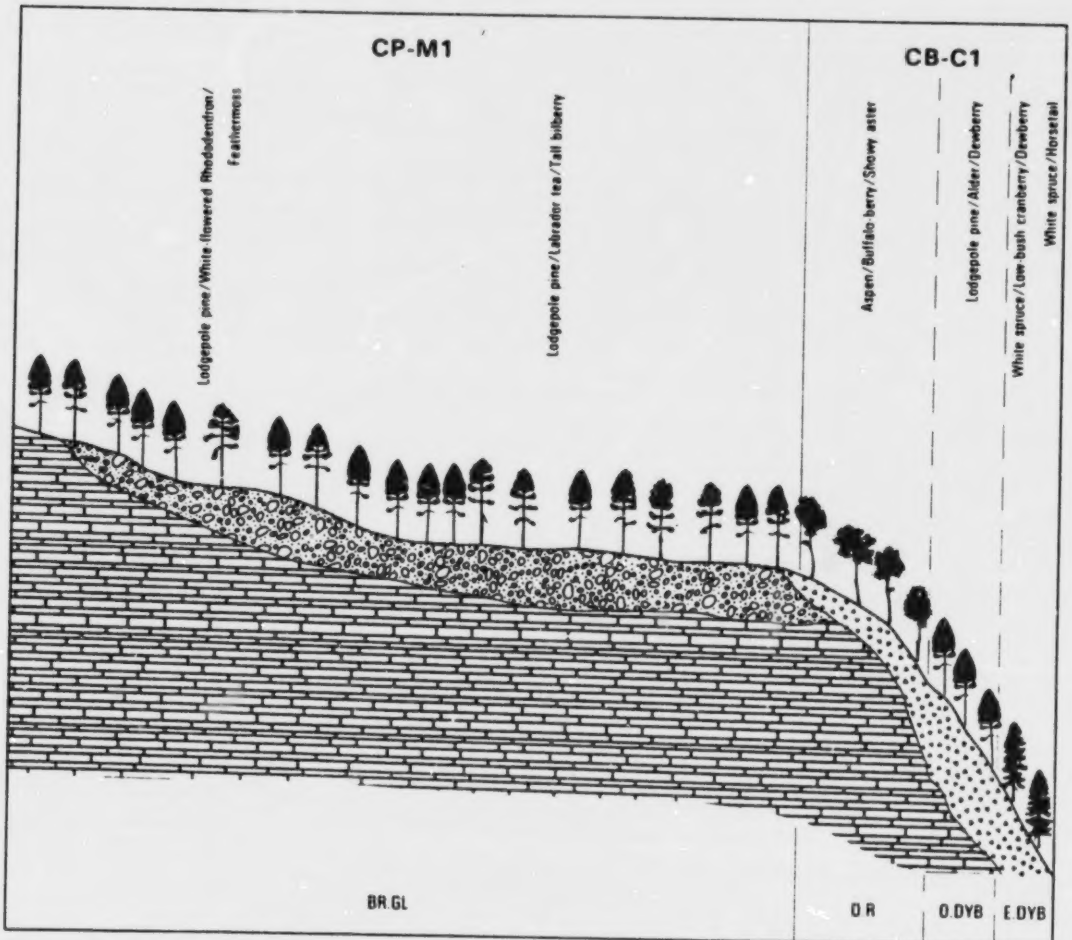

CP-M1
CB-C1
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Labrador tea/Tall bilberry
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Alder/Dewberry
White spruce/Low-bush cranberry/Dewberry
White spruce/Horsetail
BR.GL
O.R
O.DYB
E.DYB

Figure 55: Schematic Diagram of Ecosections CB-C1 and CP-M1

CB-GL1

Physical Conditions:

These small side valleys of the Cutbank River consists of poorly drained glaciolacustrine sediments with fluvial aprons covering these materials at the base of adjacent slopes (Figure 56). Surface expression of these moderately fine-textured sediments is gently sloping to undulating.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{Ov}{GL}$	$\frac{Mesic}{SiC}$	0-2	4-5	Peaty Gleysols, GL.GL	Black spruce/Feathermoss Tamarack-Black spruce/Dwarf birch/ Sphagnum
$\frac{Fv}{GL}$	$\frac{SiL}{SiC}$	2-9	3-4	O.GL, GL.GL	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

Generally poor drainage allows deciduous shrubland and open black spruce forest to cover most of the valley floor. Black spruce-lodgepole pine forest is found on fluvial aprons that are somewhat better drained.

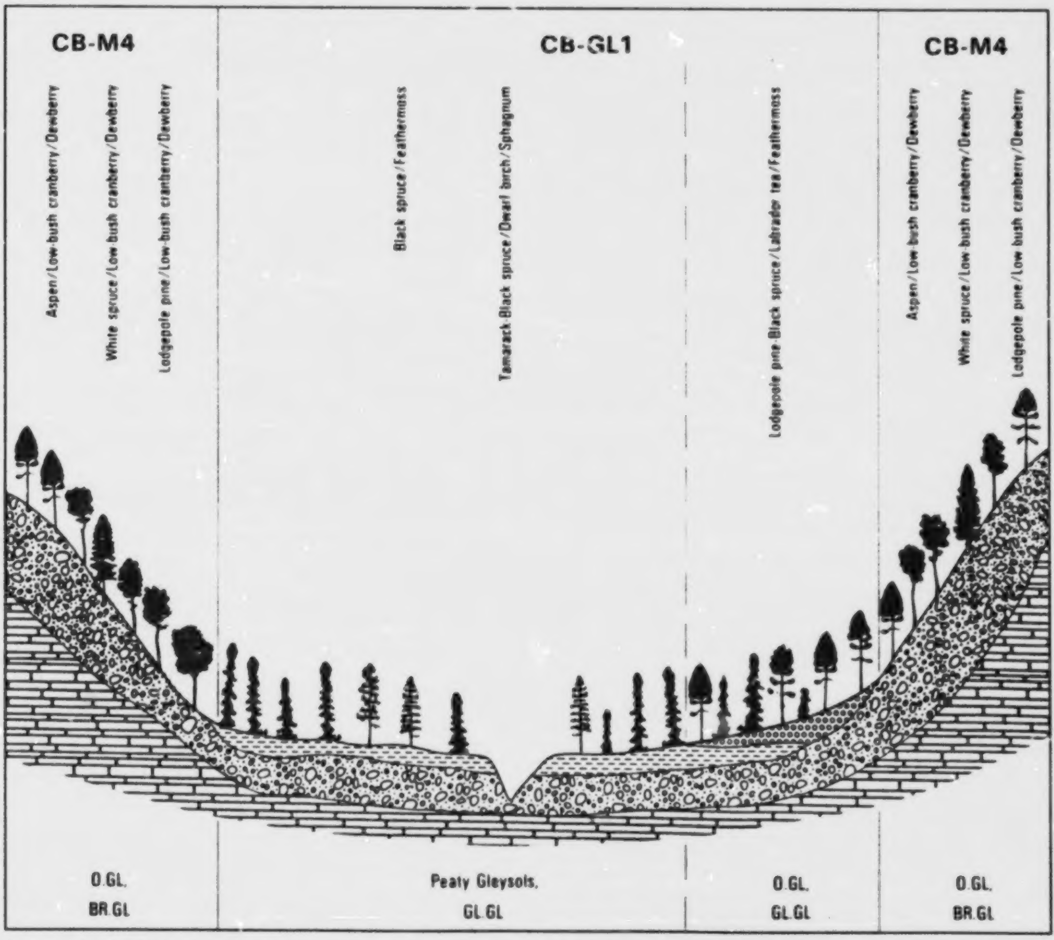

CB-M4
CB-GL1
CB-M4
Aspen/Low-bush cranberry/Dewberry
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Dewberry
Black spruce/Feathermoss
Tamarack-Black spruce/Dwarf birch/Sphagnum
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Dewberry
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Dewberry
O.GL.
BR.GL
Peaty Gleysols,
GL.GL
O.GL.
GL.GL
O.GL.
BR.GL

Figure 56: Schematic Diagram of Ecosections CB-GL1 and CB-M4

CB-GL2

Physical Conditions

This system includes several nearly level to gently undulating glaciolacustrine terraces bordering the Kakwa River (Figure 57). Moderately fine-textured glaciolacustrine sediments are commonly overlain by thin organic veneers. The prevalance of these veneers has resulted from pronounced groundwater discharge from adjacent ecosections combined with the slowly permeable underlying sediments.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Ov, GL}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{SiC/SiC}}$	0-2	4-5	Peaty Gleysols, GL.GL	Black spruce/Feathermoss Lodgepole pine-Black spruce/ Labrador tea/Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

Black spruce forest covers these terraces because of poor drainage. This grades into a mixed black spruce-lodgepole pine forest near the slopes of the Kakwa River valley where drainage is improved.

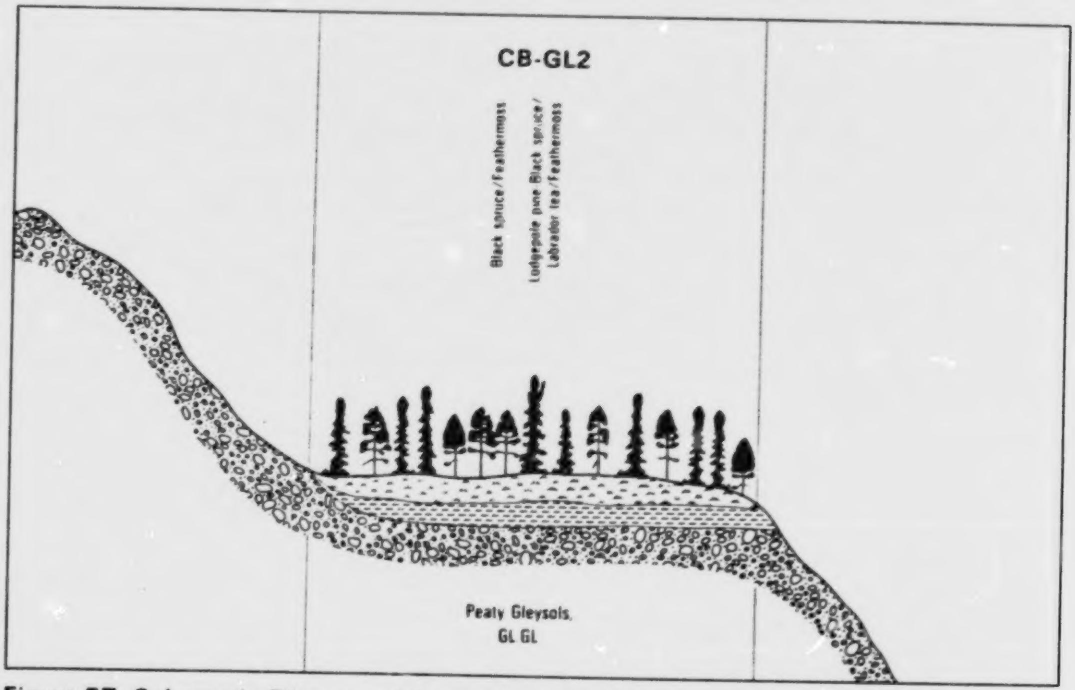

CB-GL2
Black spruce/Feathermoss
Lodgepole pine Black spruce/
Labrador tea/Feathermoss
Peaty Gleysols,
GL GL

Figure 57: Schematic Diagram of Ecosection CB-GL2

Physical Conditions:

This system is a former part of the Cutbank Plateau which has been eroded by the headwater streams of Pinto, Big Mountain and Bald Mountain Creeks and several unnamed tributary streams of the Cutbank River (Figure 58). These moderate to strongly sloping headwater valleys are covered primarly with thick Continental tills, however, small areas of slumping on steep upper slopes (25-34%) have exposed residual sandstone materials of the Paskapoo Formation. Colluvial veneers are common at the base of slumps. Fluvial veneers derived from slope wash are common at the base of lower slopes. Seepage and groundwater discharge areas are common throughout this system

Materials	Texture	Slope	Drainage	Soils	Plant Association
M, $\frac{Mv}{R}$	SiCL/SiL	6-25	2-4	O.GL, BR.GL, GL.GL, Gleysols	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla Aspen/Low-bush cranberry/Dewberry
		2-9	4-5	Gleysols, GL.GL	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss Black spruce/Feathermoss
$\frac{Fv}{M}$		6-9	5	Gleysols	White spruce/Common horsetail

Ecoregion: Boreal Foothills

Ecological Conditions

These slopes support a mixed forest of aspen, lodgepole pine and white spruce that is typical of mesic conditions in the Boreal Foothills ecoregion. White spruce stands are commn in seepage tracks where moving groundwater is a factor. Groundwater discharge areas at the base of slopes support black spruce-lodgepole pine forest.

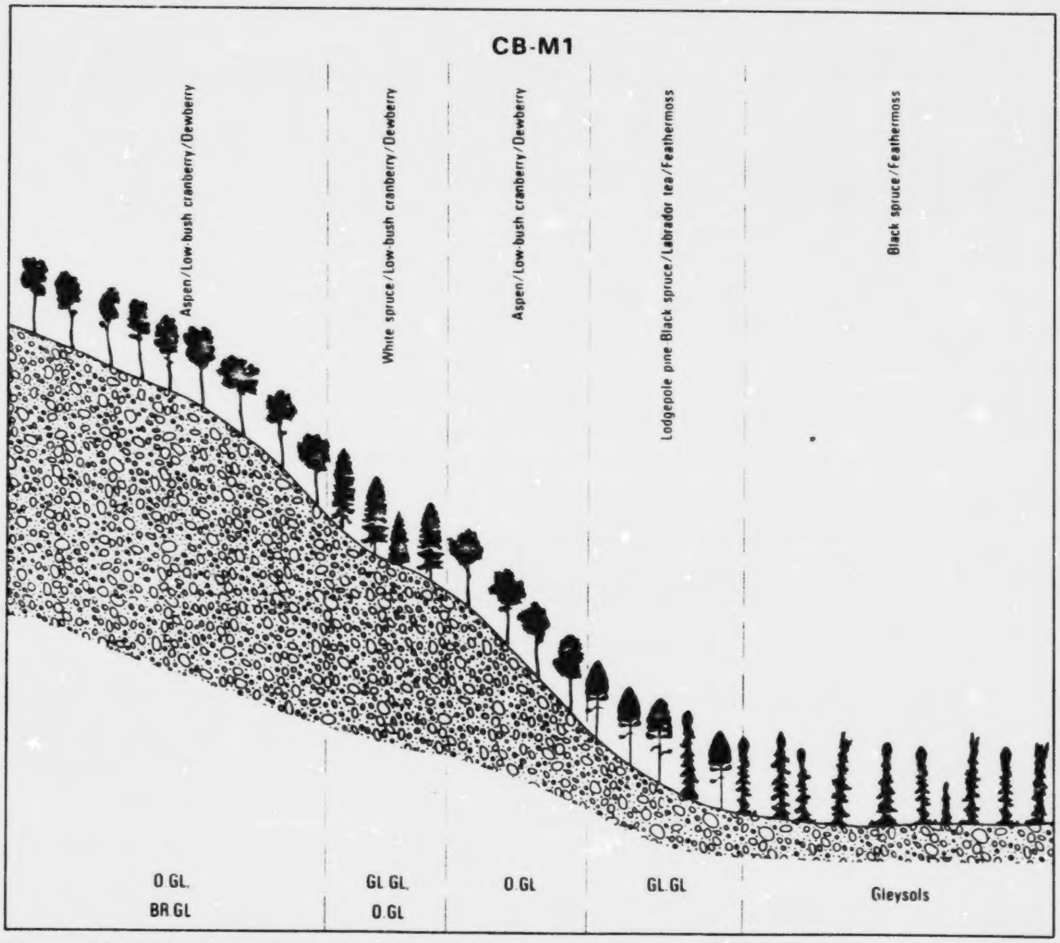

CB-M1
Aspen/Low-bush cranberry/Dewberry
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Dewberry
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Black spruce/Feathermoss
O GL.
BR GL
GL GL.
O GL
O GL
GL GL
Gleysols

Figure 58: Schematic Diagram of Ecosection CB-M1

CB-M2

Physical Conditions:

This system represents a part of a glacially eroded valley that has been dissected by Muddy Creek and its tributaries (Figure 5). Surface expression varies from rolling and ridged to gently inclined.

The principal surficial materials throughout the system are moderately fine textured Continental tills which are commonly overlain by thin fluvial and/or glaciofluvial veneers. Coarse to medium textured glaciofluvial veneers and small esker complexes are common in the western portion of the area and are the result of glacial meltwaters which flowed from the southwest. Fluvial veneers derived from slope wash commonly overlie ground moraine in the eastern portion of the ecosection. Erosion of tills on subdued bedrock ridges has resulted in the exposure of residual sandstone materials.

Materials	Texture	Slope	Drainage	Soils	Plant Associations
M, $\frac{\text{GFv}}{\text{M}}$, $\frac{\text{Xv}}{\text{R}}$	$\frac{\text{SL}}{\text{SiCL}}$	2-9	2-3	BR.GL	Aspen/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
M, $\frac{\text{Fv}}{\text{M}}$	$\frac{\text{Si}}{\text{SiCL}}$	0-6	4-5	GL.GL, Gleysols	White spruce/Low-bush cranberry/Wild sarsaparilla
GF	S	2-9	2	E.EB, O.EB	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

Most of this landscape is covered by aspen forest, along with successional deciduous shrubland dominated by aspen, willow and alder. Lodgepole pine forest occurs under drier than average conditions on glaciofluvial sands and on ridge tops where surficial materials are thin. Fluvial veneers fed by seepage water in the eastern part of the area support white spruce forest.

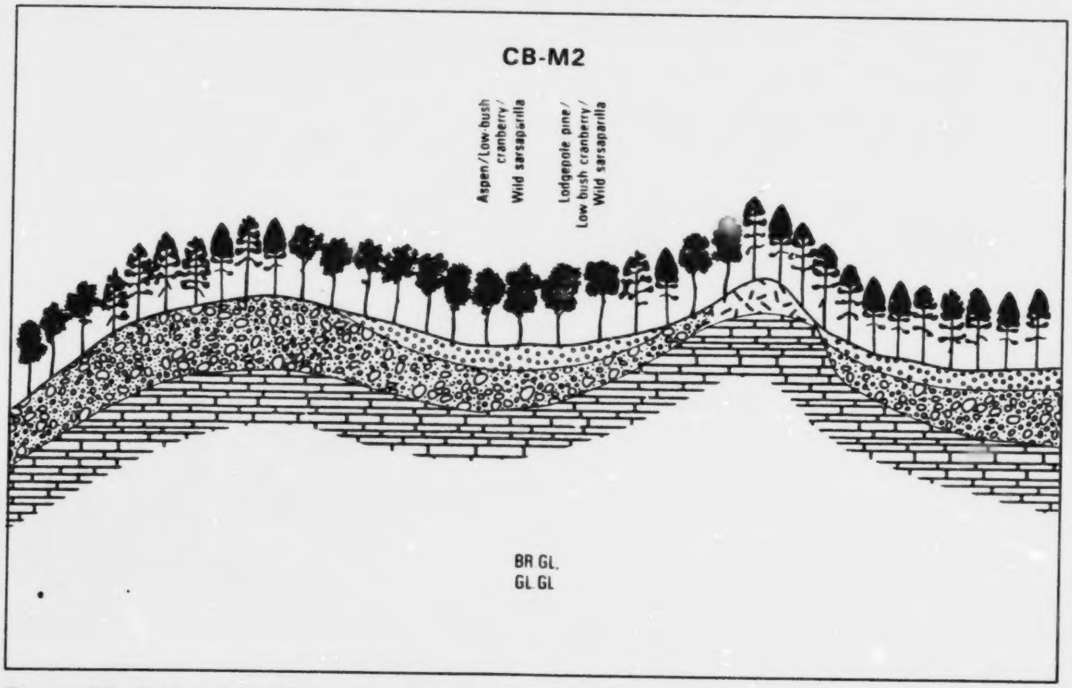

CB-M2
Aspen/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
BR GL.
GL GL

Figure 59: Schematic Diagram of Ecosection CB-M2

Physical Conditions:

This gently undulating to rolling plateau (Figure 60) is dissected by the Cutbank River and consists chiefly of moderately fine-textured Continental tills, with residual sandstone materials where tills have been eroded away. Moderately fine to fine-textured glaciolacustrine sediments occur on lower slopes.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{Xv}}{\text{R}}$	SiL-SiCL	3-9	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Dewberry Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
$\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{GLv}}{\text{M}}$	$\frac{\text{CL}}{\text{SiCL}}$	2-6	3-4	O.GL, BR.GL, GLBR.GL, Gleysols	White spruce/Low-bush cranberry/Dewberry

Ecoregion: Boreal Foothills

Ecological Conditions

Topography, drainage patterns and exposure influence the vegetation pattern on this landscape. Aspen forest tends to predominate on slopes, both on northern exposures receiving seepage water where it is found with white spruce and balsam poplar, and on drier southern exposures. White spruce forest also occurs in moister valley bottoms and on depressional terrain on uplands. Lodgepole pine forest is found on nearly level upland sites.

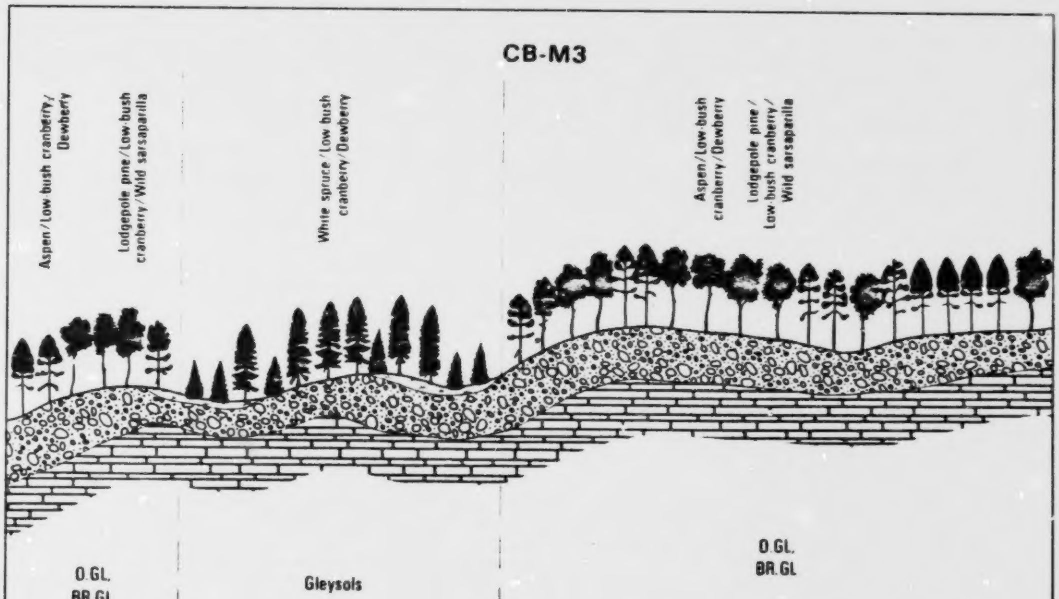

CB-M3
Aspen/Low bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low bush cranberry/Dewberry
Aspen/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
O.GL.
BR.GL
Gleysols
O.GL.
BR.GL

Figure 60: Schematic Diagram of Ecosection CB-M3

CB-M4

Physical Conditions:

Situated on subdued to gently inclined upland areas adjacent to the Kakwa River (Figure 61) this system consists of a series of east trending bedrock ridges that are covered by thick deposits of Continental till. These ridges are separated by wide, but relatively subdued valleys in which Gleysols have developed.

Materials	Texture	Slope	Drainage	Soils	Plant Association
M, $\frac{\text{Mb}}{\text{R}}$	SiL	0-15	2-3	O.GL, BR.GL	White spruce/Low-bush cranberry/ Dewberry Aspen/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla
			4-5	GL.GL, Gleysols	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss Black spruce/Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

Much of the upland forest in this ecosection has been clearcut and currently supports successional shrubland dominated by willow, aspen and reedgrass. Lodgepole pine and white spruce forst are found on uplands between the Kakwa and Smoky rivers where clearcutting has not taken place. Subdued valleys are wetter than the uplands and support a mixed black spruce-lodgepole pine forest.

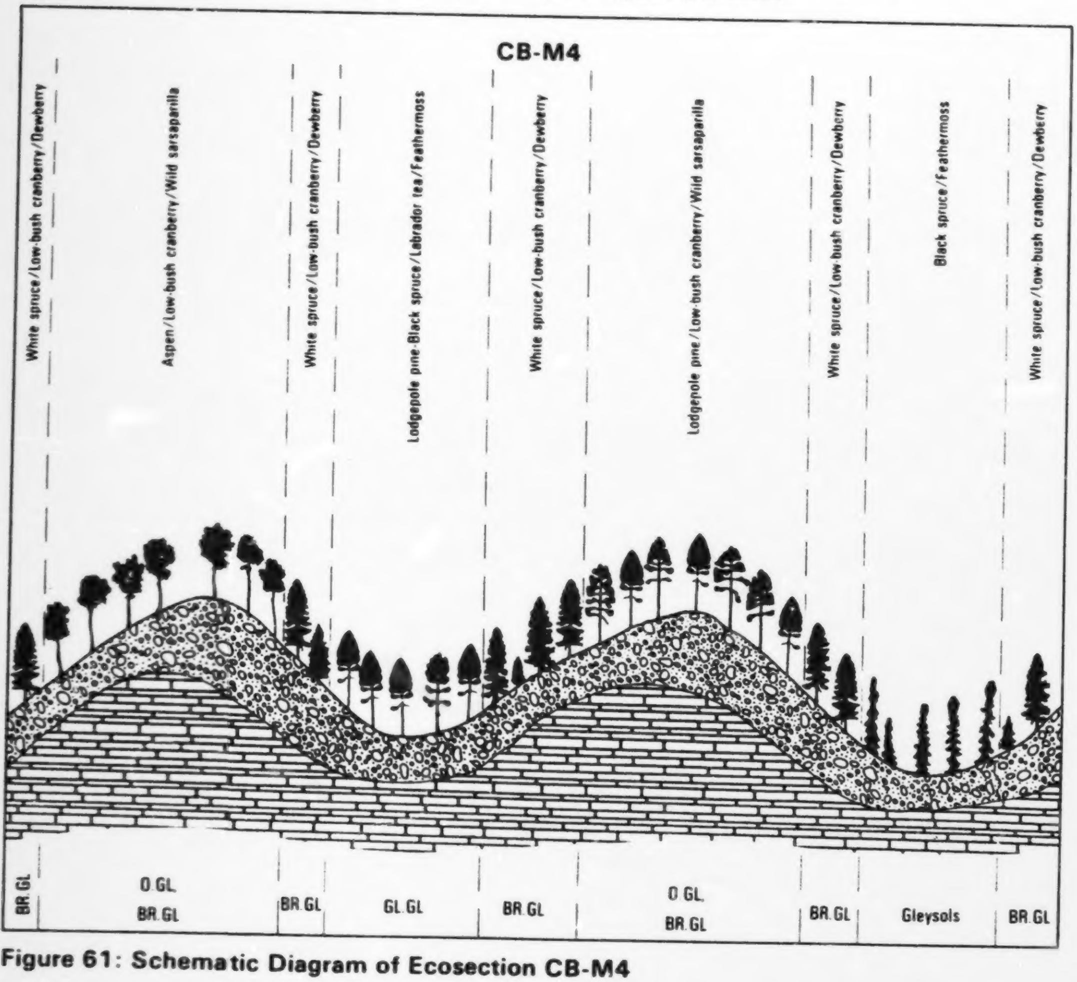

CB-M4
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Black spruce/Feathermoss
White spruce/Low-bush cranberry/Dewberry
BR.GL
O.GL
BR.GL
BR.GL
GL.GL
BR.GL
O.GL
BR.GL
BR.GL
Gleysols
BR.GL

Figure 61: Schematic Diagram of Ecosection CB-M4

CB-MC1

Physical Conditions:

These highly eroded benchlands (Figure 62) are found between Nose Creek and Nose Mountain. The headwater streams of Grayling and Little Grayling Creeks have dissected this bedrock controlled landscape. Continental tills are the principal surficial materials, however, these have been modified by colluvial and fluvial processes. This action has left thin till veneers on benchlands with thicker deposits accumulating in valley bottoms, often masking the underlying parent material.

Materials	Texture	Slope	Drainage	Soils	Plant Association
M, $\frac{M/Xvb}{R}$	SiL/LS	2-9	2-3	BR.GL, E.DYB	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla
$\frac{F/Cvb}{M}$	SiL/LS	2-15	3-4	BR.GL, E.DYB, GLBR.GL, GLE.DYB	White spruce/Low-bush cranberry/Dewberry White spruce/Common horsetail Black spruce/Feathermoss
$\frac{Cv}{R}$	LS	16-45	1-2	O.R	Lodgepole pine/Alder/Dewberry/ Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Buffalo-berry/Showy aster

Ecoregion: Boreal Foothills
Boreal Uplands

Ecological Conditions

Most of this ecosection has been burned in the recent past and currently supports successional shrubland dominated by willow and alder. The composition of remaining forest stands indicates that exposure will have considerable influence on forest regeneration on this ridged landscape, with white spruce forest on northern exposures and moist lower slopes, a mixture of lodgepole pine and aspen on neutral exposures, and aspen forest on dry southern exposures.

CB-MO1

Physical Conditions:

Lying on the north side of the Kakwa River, this system consists of subdued to rolling morainal materials with extensive organic deposits developed in depressional terrain (Figure 63). Small morainal ridges indicate that ablation till deposits of Continental origin are common. Some residual sandstone materials are found in this area.

Material	Texture	Slope	Drainage	Soils	Plant Association
M	SiL-SiCL	0-15	3-4	O.GL, GL.GL	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss
			2-3	O.GL	White spruce/Low-bush cranberry/ Dewberry Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla
Ovb/M	Mesic/SiCL	0-6	5-6	Peaty Gleysols, Mesisols	Black spruce/Feathermoss Tamarack-Black spruce/Dwarf birch/ Sphagnum

Ecoregion: Boreal Foothills

Ecological Conditions

Most of this landscape consists of imperfectly to poorly drained lowlands, with the vegetation grading from black spruce-lodgepole pine forest to black spruce forest and muskeg as soil moisture levels increase. Better drained uplands support mixedwood forest with white spruce and lodgepole pine predominating. Large portions of the upland forest have been clearcut, however, and these clearcuts currently support successional shrubland.

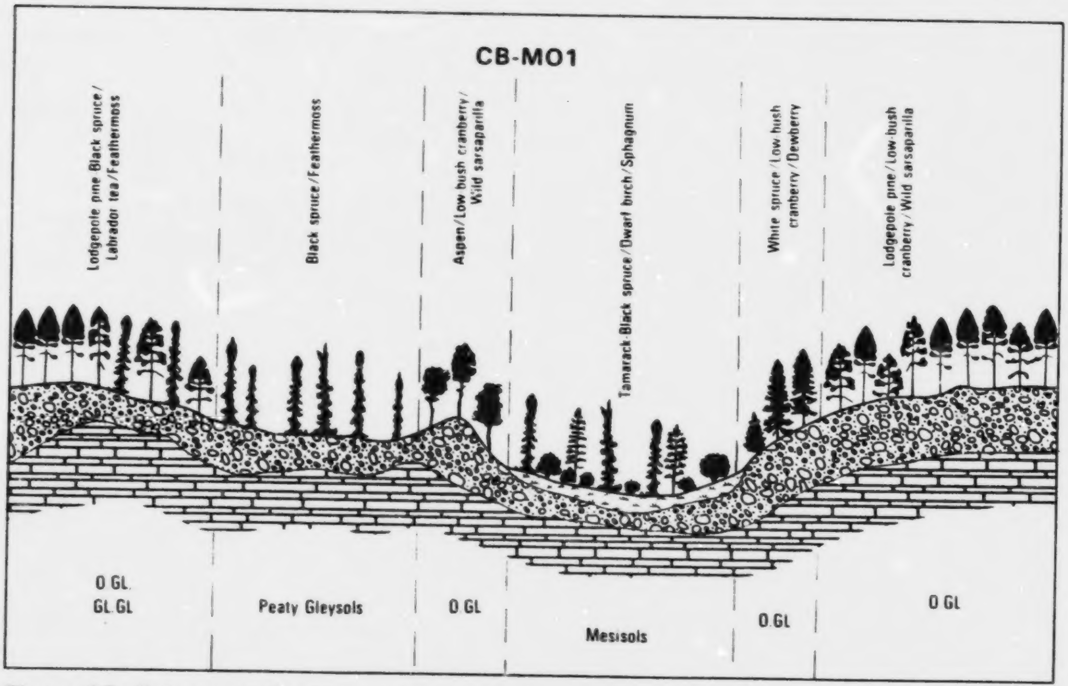

CB-MO1
Lodgepole pine Black spruce / Labrador tea/Feathermoss
Black spruce/Feathermoss
Aspen/Low bush cranberry / Wild sarsaparilla
Tamarack-Black spruce/Dwarf birch/Sphagnum
White spruce/Low bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
O GL. GL GL
Peaty Gleysols
O GL
Mesisols
O GL
O GL

Figure 63: Schematic Diagram of Ecosection CB-MO1

CB-XM1

Physical Conditions:

This system (Figure 64) consists of residual sandstone materials and thin deposits of Continental till overlying bedrock along the upper slopes of the Kakwa River valley. Bedrock strata of the Paskapoo Formation are generally very close to the surface and may be exposed in places. Surface expression varies from rolling to inclined with slopes ranging from moderate to very strong.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Xvb/Mv}}{\text{R}}$	SiCL-SiL	15-45	2-3	O.GL, BR.GL, E.EB	White spruce/Low-bush cranberry/Dewberry Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

Most of the forest vegetation on these slopes has been clearcut and currently supports successional shrubland. White spruce and aspen dominate the remaining forest areas, with lodgepole pine much less common than it it elsewhere in the subregion.

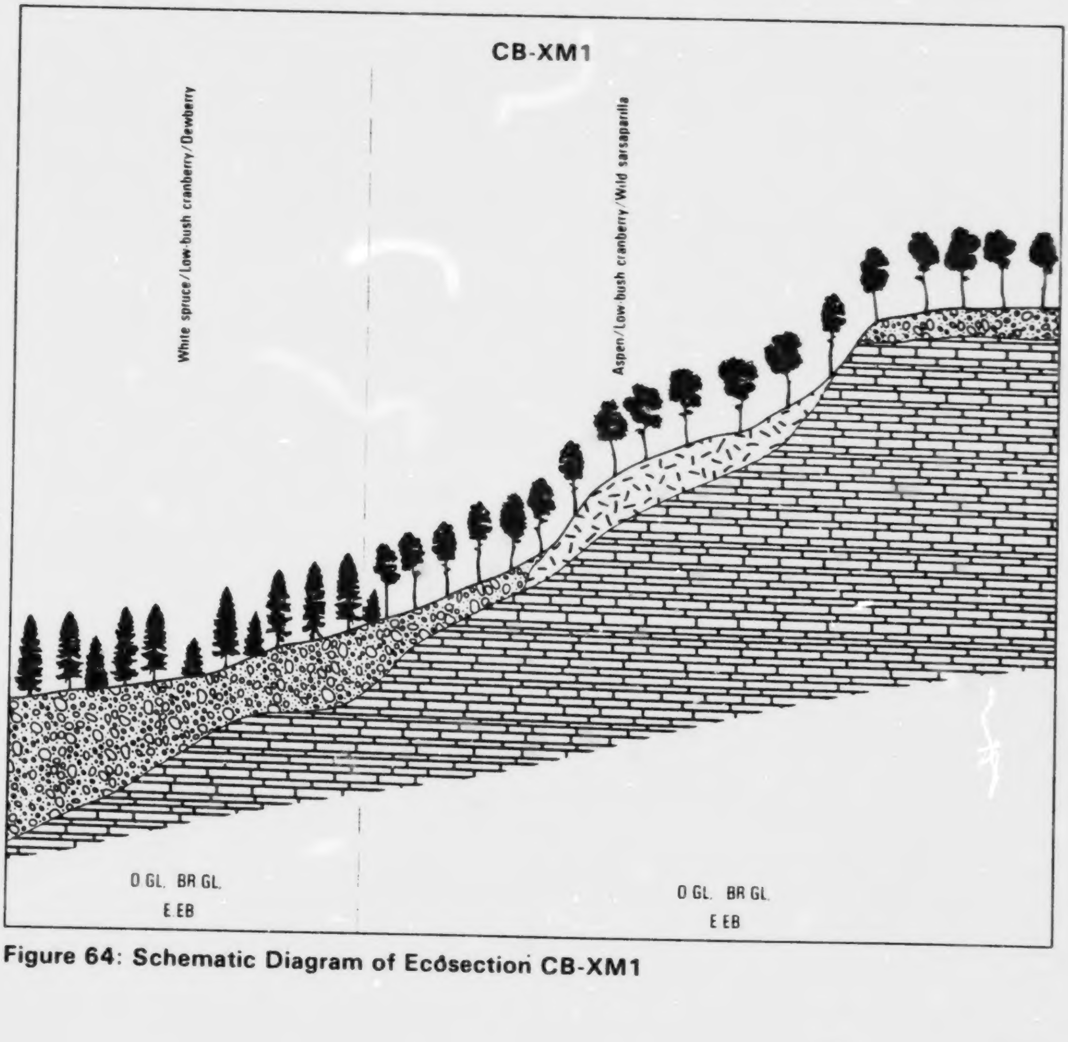

CB-XM1
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Wild sarsaparilla
O GL. BR GL.
E EB
O GL. BR GL.
E EB

Figure 64: Schematic Diagram of Ecosection CB-XM1

2.2.2 Cutbank Plateau Subregion (Ecodistrict)

This subregion is centered around the headwaters of the Cutbank River north of the Kakwa River valley (Figure 65). The topography varies from gently undulating plateau remnants to the highly dissected side slopes of tributary stream valleys of the Kakwa and Cutbank Rivers. Relief is variable across this subregion ranging from 170 m in the east to 520 m in the west around Nose Mountain. The subregion lies within several ecoregions, namely the Boreal Uplands, Boreal Foothills and Subalpine, depending on elevation.

The subregion is underlain by gently dipping bedrock of the Paskapoo Formation with strata of the Scollard Member being prominent at elevations between 975 m and 1 160 m. This bedrock is extremely prone to slumping and mass wasting. The bedrock in the area is covered by a variable thickness of Continental till with minor occurrences of Cordilleran till in the vicinity of Nose Mountain.

Moraine complexed with residual material dominate the surficial deposits in the landscape. These deposits support predominantly lodgepole pine forest with black spruce as a common component. With elevation changes across the subregion, vegetation progresses from aspen/lodgepole forest on lower elevatoins to Engelmann x white spruce at higher elevations.

Colluvium deposits are found on dissected side slopes and are generally derived form moraine and residual materials. Seepage is very common hence vegetation often reflects patterns of groundwater movement,

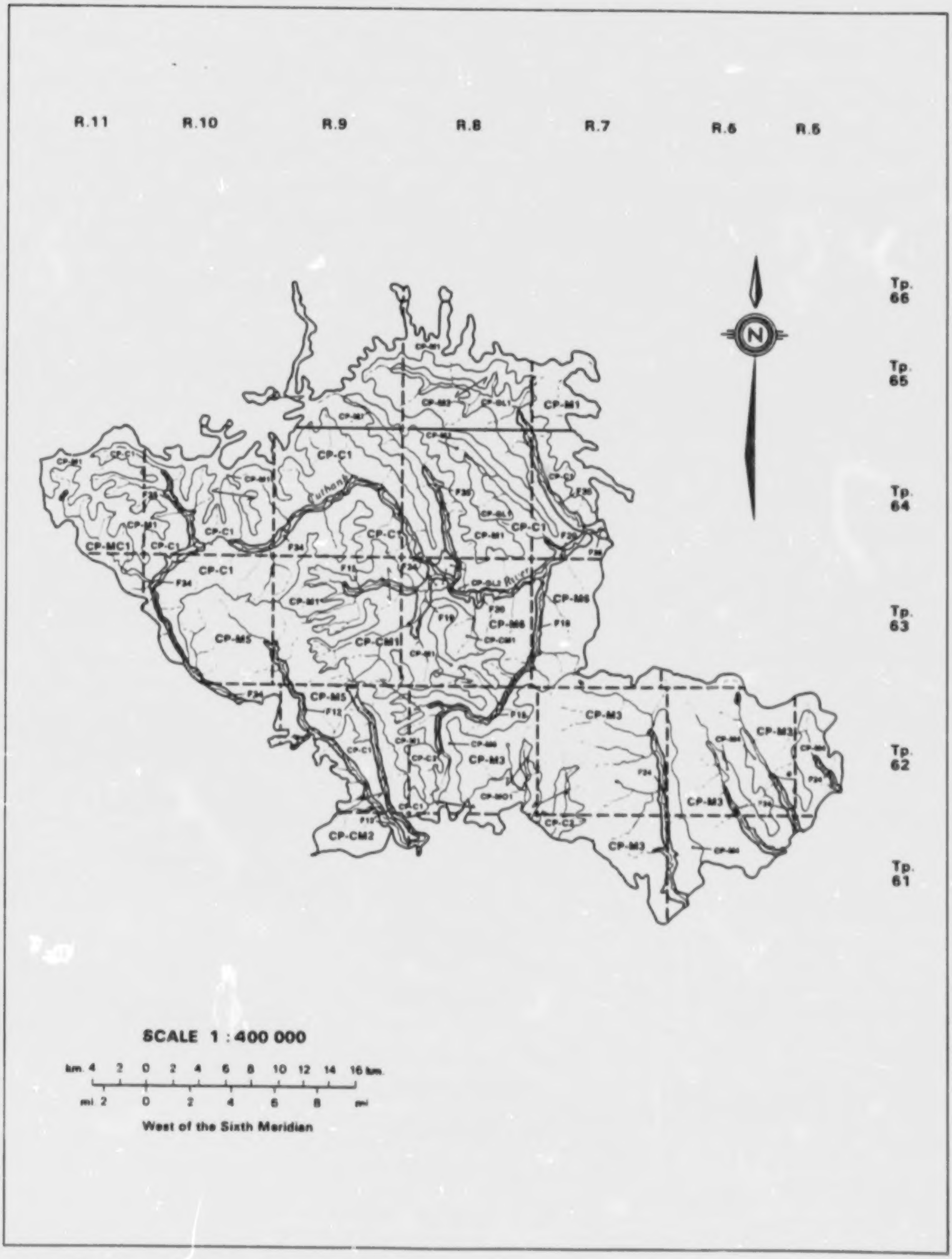

R.11
R.10
R.9
R.8
R.7
R.6
R.5
Tp. 66
Tp. 65
Tp. 64
Tp. 63
Tp. 62
Tp. 61
N
CP-C1
CP-M1
CP-MC1
CP-M5
CP-CM1
CP-M6
CP-M3
CP-CM2
CP-C2
F34
F12
F19
F20
Cutbank River
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi
West of the Sixth Meridian

Figure 65: Cutbank Plateau Subregion (CP)

with white spruce in seepage tracks and black spruce and dwarf birch in groundwater discharge areas.

The Cutbank Plateau subregion is divided into fourteen systems/ ecosections (Table 15). More detailed descriptions with accompaning schematic diagrams follow the table. Fluvial systems which cross the subregion are discussed in Volume I, Section 2.5 of the report.

There were nine fluvial systems identified (F12, F13, F15, F18, F19, F20, F24, F34, F35).

Table 15

SUMMARY OF ECOSECTIONS IN THE CUTBANK PLATEAU SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
CP-C1	Steep, highly dissected valley walls	Moderately fine-textured coluvium	White spruce, lodgepole pine and black spruce-pine forest
CP-C2	Undulating headwater valleys	Moderately fine-textured colluvium and continental till	Lodgepole pine and white spruce forest
CP-CM1	Steep-sided headwater valleys	Thin medium-textured till and colluvium	Lodgepole pine and aspen forest
CP-CM2	Steeply sloping valley walls	Thin medium-textured colluvium and thick continental till	Lodgepole pine and black spruce-pine forest
CP-GL1	Level, eroded terraces	Glaciolacustrine clay and peat	Lodgepole pine-black spruce and whte spruce forest, muskeg
CP-GL2	Lacustrine terraces	Peat over glaciolacustrine silt and clay	Black spruce forest and muskeg
CP-M1	Gently undulating plateau	Moderately fine-textured till and residual materials	Lodgepole pine, Engelmann spruce-Subalpine fir forest
CP-M2	Gently side slopes	Moderately fine-textured and peat	Lodgepole pine and black spruce-pine forest, deciduous shrubland
CP-M3	Gently rolling ridges	Medium-moderately fine-textured till and peat	Lodgepole pine, black spruce-pine and black spruce forest, muskeg
CP-M4	Rolling ridges and side slopes	Moderately fine-textured till	Lodgepole pine, black spruce-pine and aspen forest
CP-M5	Moderately sloping basin	Moderately fine-textured till with sandy overlays	Lodgepole pine forest, deciduous shrubland and grassland
CP-M6	Gentle to steep ridges	Medium-textured till and colluvium	Lodgepole pine, black spruce-pine, white spruce and aspen forest
CP-MC1	Gentle to steep-sided headwater valleys	Moderately fine-textured till and colluvium, and peat	Lodgepole pine and Engelmann spruce-subalpine fir forest, dwarf birch shrublands
CP-MO1	Gently sloping ridges and lower slopes	Medium-textured till and peat	Lodgepole pine and black spruce-pine forest, muskeg

CP-C1

Physical Conditions:

Surficial deposits along this portion of the moderately to steeply sloping walls of the Cutbank River valley consist of colluvium, which is a mixture of weathered residual material and continental till (Figure 66). Till has been eroded from adjacent upland areas.

The valley walls of this system are extremely prone to slumping. The high incidence of slumping is the result of the presence of highly erodable shales of the Scollard Member of the Paskapoo formation. The presence of the Scollard member combined with north-dipping bedrock strata leads to pronounced groundwater discharge on northern exposures.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Cvb}}{\text{R}}$	SiCL-SCL	31-70	1-3	O.R, O.DYB	Lodgepole pine/Hairy wild rye Lodgepole pine/Alder/Dewberry White spruce/Feathermoss Aspen/Buffaloberry/Aster
		15-30	2-3	O.DYB, E.DYB	Lodgepole pine/Alder/Dewberry/ Lodgepole pine/Labrador tea-Tall bilberry White spruce/Feathermoss
		0-15	4	GL.DYB, GL.BRGL, Gleysols	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Aspect and groundwater seepage have significant influences on the vegetation pattern. Lodgepole pine and aspen forest is found on southern exposures, with aspen especially common where slumping has occurred. Northern exposures support a mixture of lodgepole pine and white spruce forest, white spruce predominating on slopes receiving seepage water. White and black spruce forest occurs in groundwater discharge areas on lower slopes.

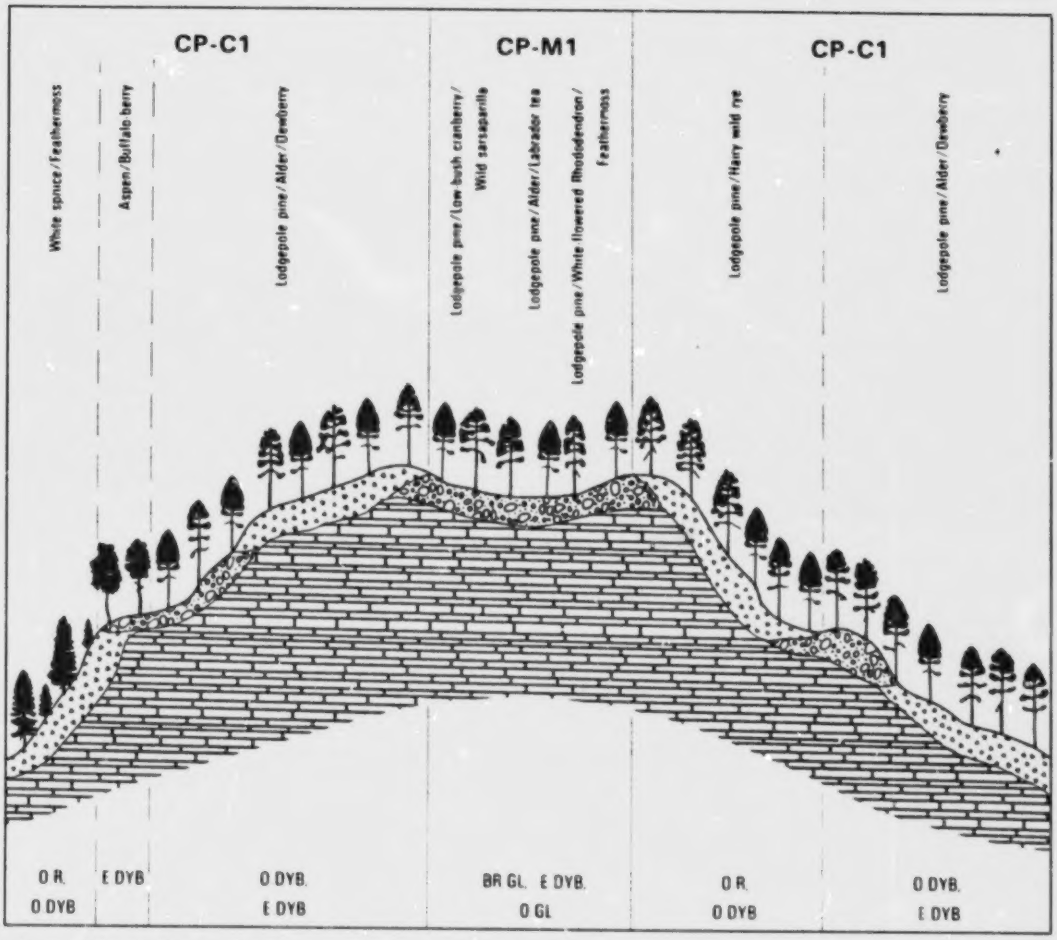

CP-C1
CP-M1
CP-C1
White spruce/Feathermoss
Aspen/Buffalo-berry
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/White flowered Rhododendron/Feathermoss
Lodgepole pine/Hairy wild rye
Lodgepole pine/Alder/Dewberry
O.R. O.DYB
E.DYB
O.DYB. E.DYB
BR.GL. E.DYB. O.GL
O.R. O.DYB
O.DYB. E.DYB

Figure 66: Schematic Diagram of Ecosections CP-C1 and CP-M1

CP-C2

Physical Conditions:

This complex system includes portions of the inclined to undulating upper headwater valley walls of Boulder and Route Creeks and several other unnamed tributaries of the Kakwa River (Figure 67). Thin colluvial veneers are the principal surficial materials. These colluvial veneers are derived from eroded till deposits and residual sandstone materials. Till deposits of Continental origin occur on lower slope positions and are commonly overlain by a combination of either colluvial materials, thin fluvial veneers derived from slope wash or thin glaciofluvial materials.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{Cvb}{R}$	KL-SL	15-45	2-3	E.DYB, BR.GL	Lodgepole pine/Alder/Dewberry Lodgepole pine/Hairy wild rye White spruce/Feathermoss
$\frac{Mvb}{R}$	SiL-SiCL	2-15	2-4	O.GL, BR.GL, GL.GL	Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Alder/Dewberry Black spruce/Horsetail/Sphagnum
$\frac{GFvb}{M}$	gSL-KL	2-9	2-3	BR.GL	Lodgepole pine/Labrador tea/Tall bilberry

Ecoregion: Boreal Uplands

Ecological Conditions

Overstory composition reflects the increased availability of soil moisture on lower slope positions, with lodgepole pine forest on upper slopes, and white and black spruce forest on lower slopes. Open black spruce forest and shrubland occurs sporadically in groundwater discharge areas.

Aspect has an influence on the understory of pine forests, with those on southern exposures having a sparse grassy understory.

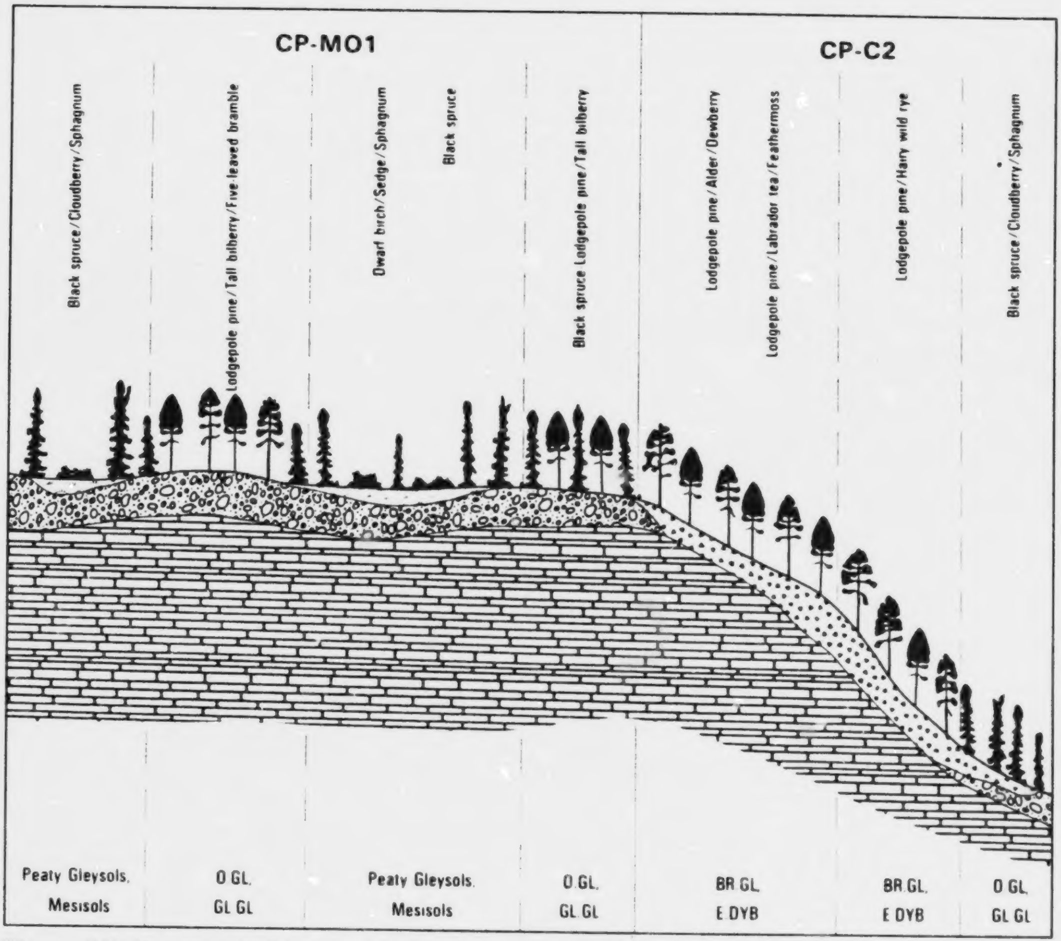

CP-MO1
CP-C2
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Tall bilberry/Five-leaved bramble
Dwarf birch/Sedge/Sphagnum
Black spruce
Black spruce Lodgepole pine/Tall bilberry
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Hairy wild rye
Black spruce/Cloudberry/Sphagnum
Peaty Gleysols, Mesisols
O.GL, GL.GL
Peaty Gleysols, Mesisols
O.GL, GL.GL
BR.GL, E.DYB
BR.GL, E.DYB
O.GL, GL.GL

Figure 67: Schematic Diagram of Ecosections CP-C2 and CP-MO1

CP-CM1

Physical Conditions:

The highly dissected, steeply sloping headwater valleys of Wolf and North Wolf Creeks have a complex of thin colluvial veneers overlying bedrock on upper slope positions and relatively thick till deposits of Continental origin on lower slopes (Figure 68). Colluvial veneers which account for approximately 60% of all surficial materials are derived from eroded tills and residual sandstone materials. Pronounced headwater erosion has resulted in oversteepened valley walls that are prone to mass wasting and slumping.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Cv}}{\text{R}}$	SiCL-kL	31-70	2-3	O.R, E.EB	Lodgepole pine/Hairy wild rye Lodgepole pine/Alder/Dewberry Aspen/Buffalo-berry/Showy aster
$\frac{\text{Mvb}}{\text{R}}$	SiCL	6-30	2-3	O.GL, BR.GL	Lodgepole pine/Lcw-bush cranberry/ Wild sarsaparilla Lodgepole pine/Alder/Dewberry Lodgepole pine/Labrador tea/ Feathermoss

Ecoregion: Boreal Foothills
Boreal Uplands

Ecological Conditions

Topography and elevation influence vegetation composition within these valleys. At lower elevations, lodgepole pine forest is found on gentle slopes while surficial materials are thck, and aspen forest occurs on steeper areas. Deciduous shrubland and balsam poplar groves are found in groundwater discharge areas. Lodgepole pine forest predomnates at higher elevations, where small stands of aspen are confined to steep southern exposures.

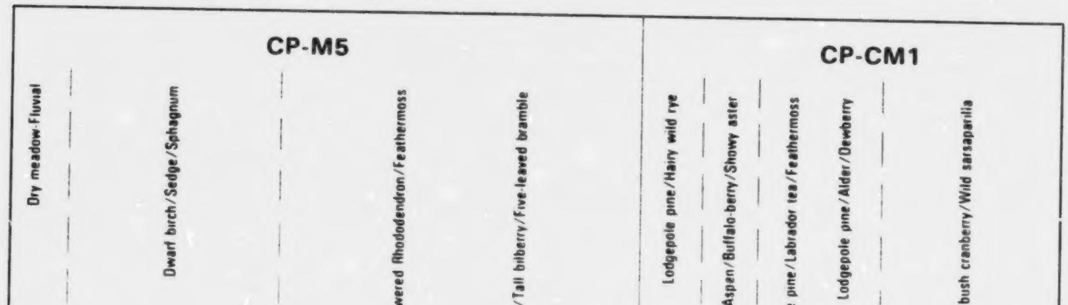

CP-M5
CP-CM1
Dry meadow-fluvial
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/Hairy wild rye
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
O.R, GLCU.R
Peaty Gleysols, Mesisols
O.GL, BR.GL, E.DYB
O.R
E.EB
O.GL BR.GL
O.GL BR.GL

Figure 68: Schematic Diagram of Ecosections CP-CM1 and CP-M5

CP-CM2

Physical Conditions:

This system occurs northwest of the confluence of Redrock Creek and the Kakwa River and is characterized by massive bedrock slumps (Figure 69) that have occurred along seams of coal or bentonitic shales. Surficial materials consist of thin colluvial veneers and thick till deposits of Continental origin. Colluvial materials were derived from eroded till deposits and locally weathered sandstone materials. Surface expression varies from inclined to ridged with slopes ranging from moderate to very strong.

Materials	Texture	Slope	Drainage	Soils	Plant Association
$\frac{\text{Mvb}}{\text{R}}$	kL	10-30	2-3	O.GL, BR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Lodgepole pine/Labrador tea/Tall bilberry, Black spruce-Lodgepole pine/Labrador tea-Tall bilberry
$\frac{\text{Cvb}}{\text{R}}$	SL	10-30	2-3 4-5	O.R, O.EB GLBR.GL, Gleysols	Lodgepole pine/Alder/Dewberry Black spruce/Horsetail/Sphagnum

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Differences in the moisture regimes of parent materials create the vegetation pattern. Lodgepole pine and black spruce-pine forest are found on inclined till deposits at high elevations. Pronounced movement of groundwater through colluvial materials at lower elevation is reflected in the pattern of open black spruce muskeg in seepage tracks and lodgepole pine forest with a dense alder understory on elevated sites. Excessive soil moisture levels have slowed forest succession on recently burned areas on lower slopes.

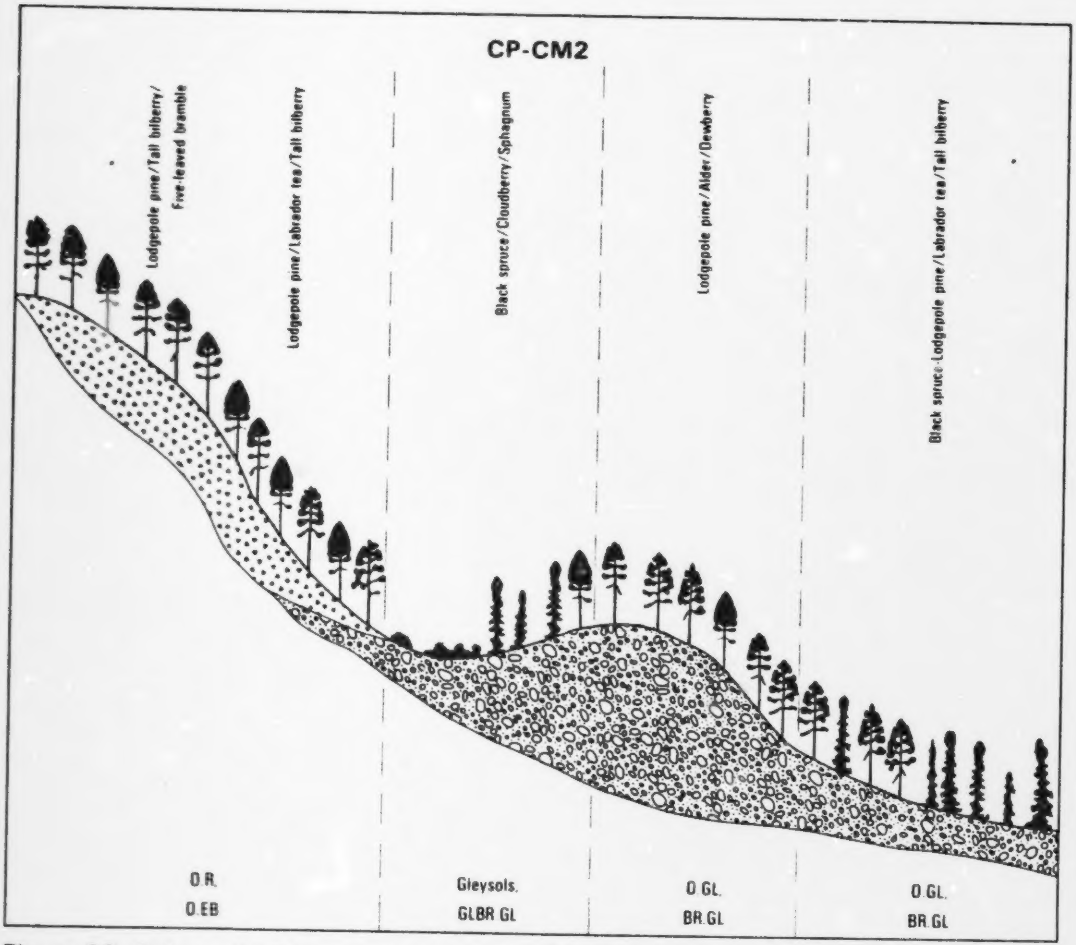

CP-CM2
Lodgepole pine/Tall bilberry/ Five-leaved bramble
Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Alder/Dewberry
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
O.R.
O.EB
Gleysols,
GLBR.GL
O.GL.
BR.GL
O.GL.
BR.GL

Figure 69: Schematic Diagram of Ecosection CP-CM2

CP-GL1

Physical Conditions:

This system consists of level to very gently sloping, eroded glaciolacustrine terraces (Figure 70) bordering tributary streams north of the Cutbank River. These moderately fine to fine textured glaciolacustrine sediments are of variable thickness and are the result of sediments being settled out of a short-lived, ice dammed lake. These glaciolacustrine sediments are overlain by either thick accumulations of sphagnum peat or thin glaciofluvial and fluvial veneers derived from slope wash. The entire system is underlain by moderately fine-textured Continental tills, which combined with seepage from adjacent areas, causes poor drainage conditions throughout.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GL	SiCL-CL	0-2	4-5	GL.GL, Gleysols	Lodgepole pine/Black spruce/ Labrador tea/Feathermoss White spruce/Common horsetail
GFv/M	SiCL/gCL	0-5	3-4	O.GL, GL.GL	Lodgepole pine/Black spruce/ Labrador tea/Feathermoss
Ovb/GL	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Feathermoss/ Tamarack-Black spruce/Dwarf birch/ Sphagnum

Ecoregion: Boreal Foothills

Ecological Conditions

The vegetation changes from black spruce-lodgepole pine forest to black spruce forest and muskeg as soil moisture increases closer to tributary streams.

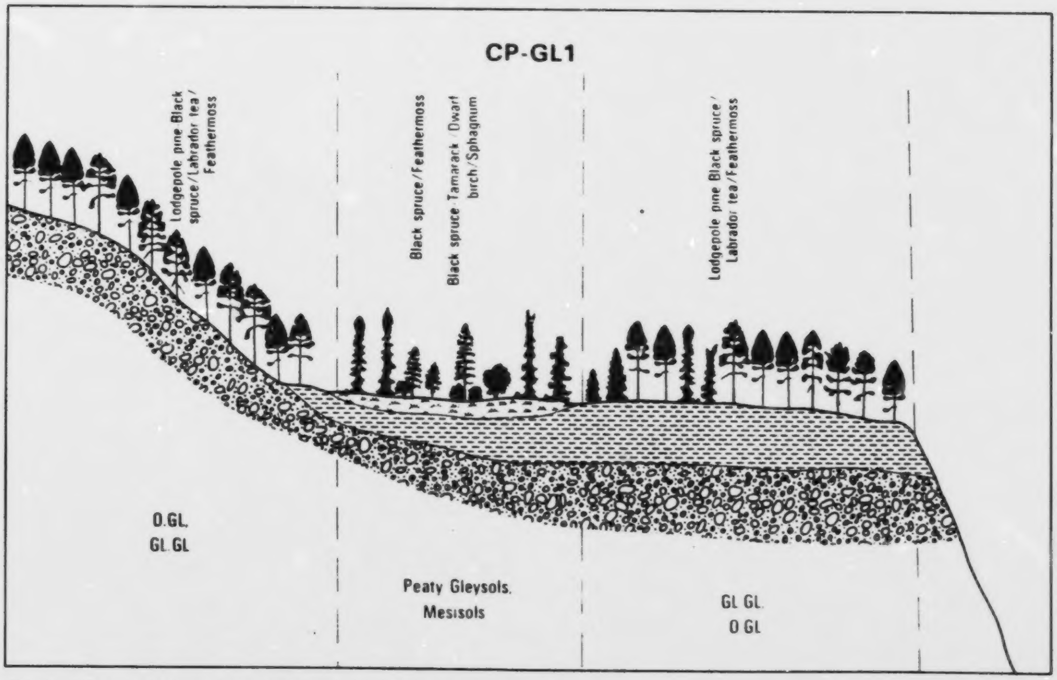

CP-GL1
Lodgepole pine/Black spruce/Labrador tea/Feathermoss
Black spruce/Feathermoss
Black spruce-Tamarack-Dwarf birch/Sphagnum
Lodgepole pine/Black spruce/Labrador tea/Feathermoss
O.GL
GL.GL
Peaty Gleysols,
Mesisols
GL.GL
O.GL

Figure 70: Schematic Diagram of Ecosection CP-GL1

CP-GL2

Physical Conditions:

Several small, poorly to very poorly drained glaciolacustrine terraces make up this system (Figure 71) which occurs adjacent to the confluence of Wolf Creek and the Cutbank River. These moderately fine to fine-textured glaciolacustrine sediments have settled out of a short lived ice dammed lake that occupied portions of the Cutbank River and Wolf Creek valleys. These deposits are overlain by thin accumulations of sphagnum peat and are underlain in turn by Continental tills.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Ov}{GL}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Gleysols, Mesisols	Black spruce/Feathermoss Tamarack-Black spruce/Dwarf birch/Sphagnum

Ecoregion: Boreal Foothills

Ecological Conditions

Closed black spruce forests and open muskeg characterize this poorly drained landscape.

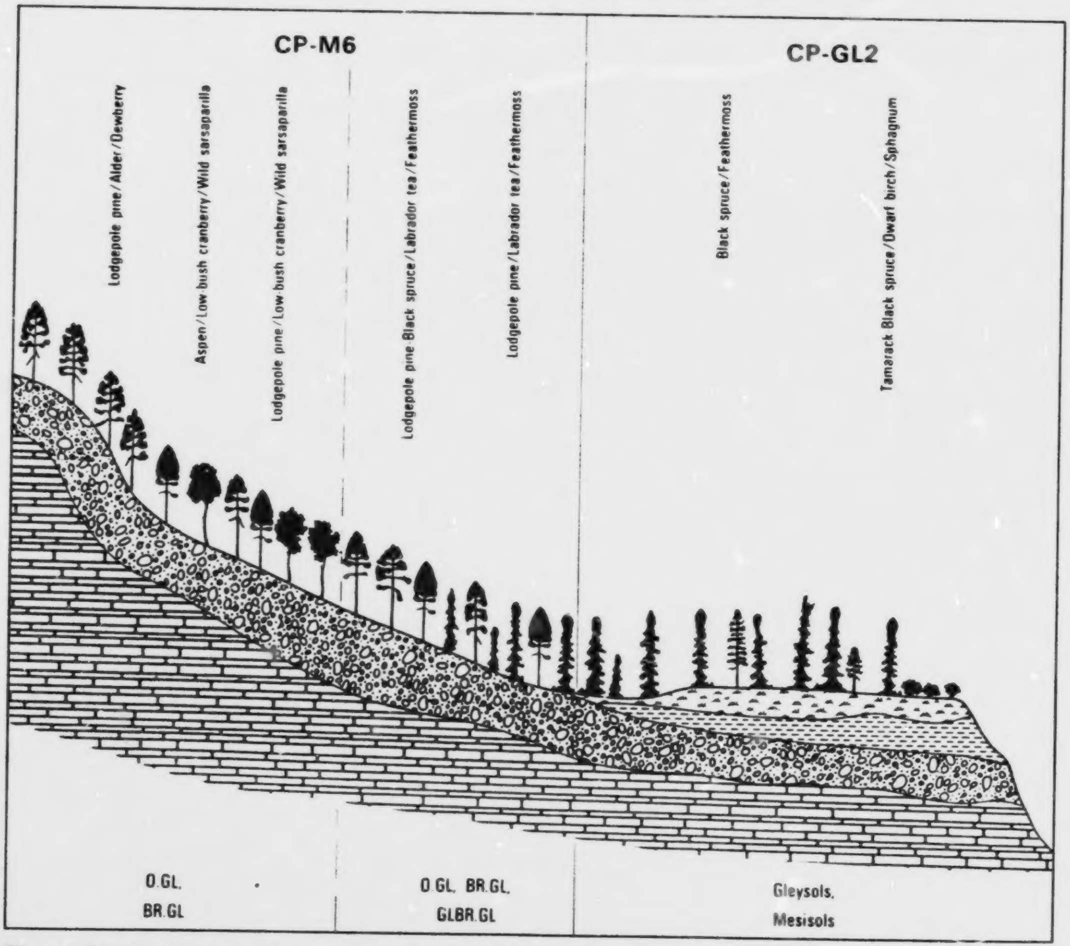

CP-M6
CP-GL2
Lodgepole pine/Alder/Dewberry
Aspen/Low bush cranberry/Wild sarsaparilla
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Feathermoss
Tamarack Black spruce/Dwarf birch/Sphagnum
O.GL.
BR.GL
O.GL. BR.GL.
GLBR.GL
Gleysols,
Mesisols

Figure 71: Schematic Diagram of Ecosections CP-GL2 and CP-M6

CP-M1

Physical Conditions

This is a narrow, gently undulating to rolling plateau remnant that divides the Cutbank River from the Wapiti River drainage system (Figure 72). Side slopes (CP-C1, CB-M1) have been highly dissected by tributaries of these rivers. Till deposits of Cordilleran (in the west) and continental (in the east) origin thinly mask the bedrock, and decrease in thickness toward the west where residual materials are often exposed.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mb}}{\text{R}}$	SiCL	0-5	2-4	O.GL, BR.GL, GL.GL	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla Lodgepole pine/Alder/Labrador tea
$\frac{\text{Mv}}{\text{X}}$	$\frac{\text{SiCL}}{\text{SCL}}$	0-5	2-3	BR.GL, E.DYB	Lodgepole pine/Alder/Labrador tea Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/White-flowered rhododendron/Feathermoss
$\frac{\text{Xv}}{\text{R}}$	SCL	3-6	2-3	BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron/Feathermoss Lodgepole pine/Tall bilberry/Five-leaved bramble Engelmann spruce-Subalpine fir/ White-flowered rhododendron/ Feathermoss

Ecoregion: Boreal Foothills
Boreal Uplands
Subalpine

Ecological Conditions

Lodgepole pine forest covers this plateau, with local variation in tree species composition caused by gradual changes in climate as elevation increses. Aspen is a common component of the tree canopy at lower elevatoins, while at higher elevations Engelmann spruce and subalpine fir are mixed with pine.

Variation in the thickness of till deposits has an influence on understory composition. Alder is extremely common where till deposits are thin, probably because low permeability of the underlying bedrock traps water near the surface.

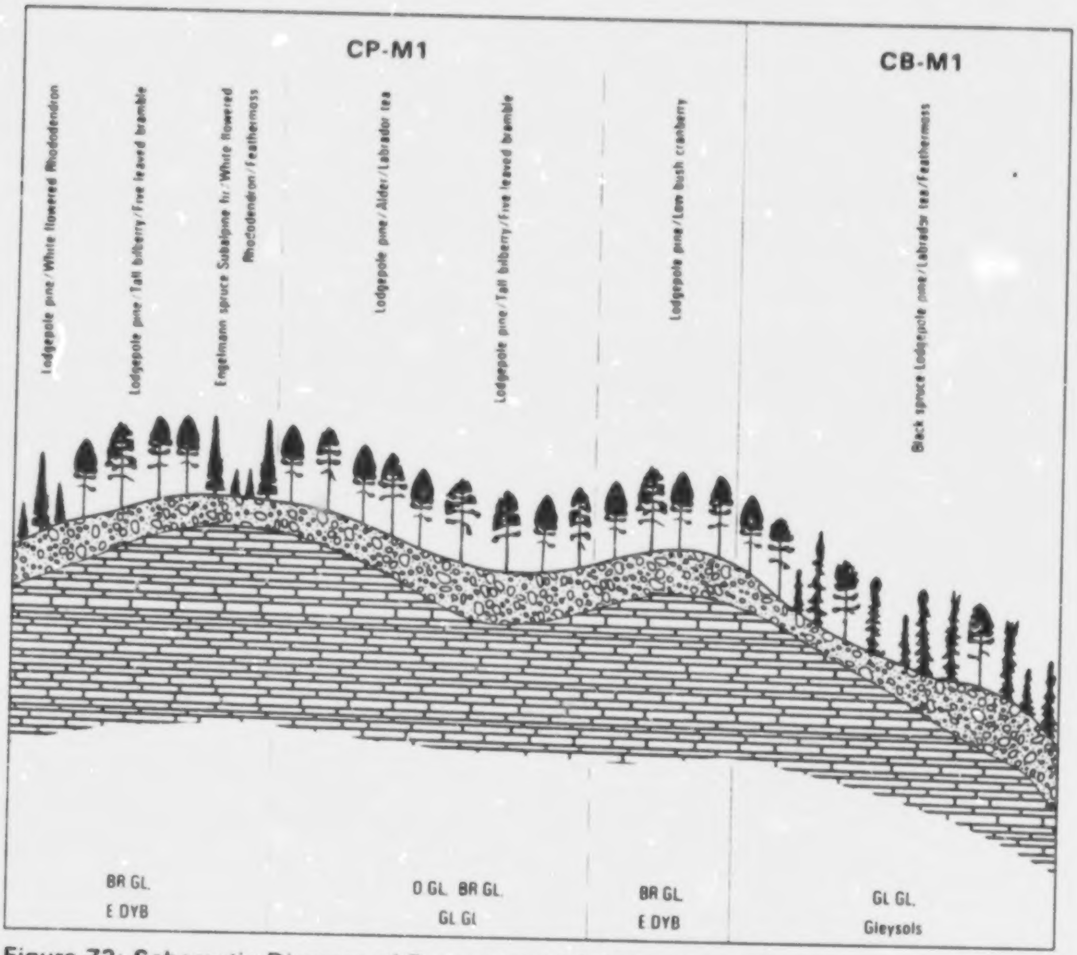

CP-M1
CB-M1
Lodgepole pine/White flowered Rhododendron
Lodgepole pine/Tall bilberry/Five leaved bramble
Engelmann spruce Subalpine fir/White flowered Rhododendron/Feathermoss
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/Tall bilberry/Five leaved bramble
Lodgepole pine/Low bush cranberry
Black spruce Lodgepole pine/Labrador tea/Feathermoss
BR GL.
E DYB
O GL. BR GL.
GL GL
BR GL.
E DYB
GL GL.
Gleysols

Figure 72: Schematic Diagram of Ecosections CP-M1 and CB-M1

CP-M2

Physical Conditions:

This basin-like system, north of the Cutbank River, consists of gently undulating to rolling till deposits of Continental origin (Figure 73). Extensive headwater erosion of the Cutbank Plateau by an unnamed tributary stream of the Cutbank River has resulted in the formation of this basin. Thick, moderately well to imperfectly drained, moderately fine-textured till deposits occur across much of the system and seepage is common. Small accumulations of sphagnum peat develop where rotational slumps have occurred.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SiCL	5-15	3	O.GL, BR.GL	Lodgepole pine/Alder/Dewberry
		2-5	3-4	O.GL, BR.GL, GL.GL, GLBR.GL	Lodgepole pine/Alder/Labrador tea Lodgepole pine/Labrador tea/Feathermoss Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
$\frac{\text{Ovb}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

The vegetation pattern reflects local variation in drainage conditions on this irregular topography. Lodgepole pine forest covers most of the landscape, grading into black spruce-lodgepole pine forest along the numerous seepage tracks in this ecosection. The small patches of level terrain, produced by slumping, support open black spruce forest and shrubby muskeg.

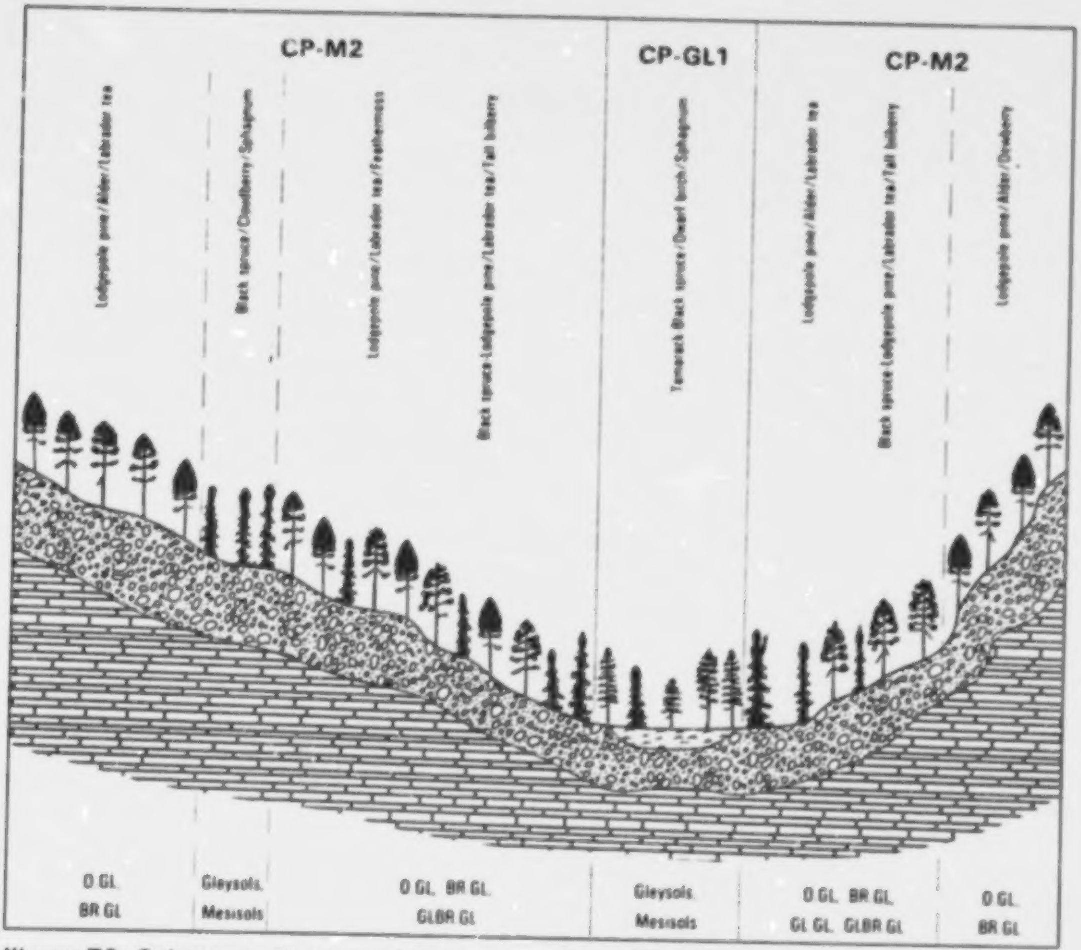

CP-M2
CP-GL1
CP-M2
Lodgepole pine/Alder/Labrador tea
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Tamarack-Black spruce/Dwarf birch/Sphagnum
Lodgepole pine/Alder/Labrador tea
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Alder/Crowberry
O GL
BR GL
Gleysols
Mesisols
O GL, BR GL
GLBR GL
Gleysols
Mesisols
O GL, BR GL
GL GL, GLBR GL
O GL
BR GL

Figure 73: Schematic Diagram of Ecosections CP-M2 and CP-GL1

CP-M3

Physical Conditions:

This system which occurs on the north side of the Kakwa River consists of a series of gently sloping, south-trending ridges which are separated by several tributary valleys (Figure 74). Surficial materials consists primarily of medium to moderately-fine textured Continental tills overlying bedrock. Residual sandstone materials are common on steeper terrain where till deposits are either thin or absent. Numerous small accumulations of sphagnum peat have developed locally where drainage is impeded.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Rvb}{R}$	SiL-SiCL	2-10	2-4	O.GL, BR.GL, E.DYB, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry Lodgepole pine/Alder/Dewberry
$\frac{Ovb}{M}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Differences in the depth of surficial materials and local variation in drainage produces the vegetation pattern in this ecosection. Most of the landscape is covered by coniferous forest that grades from lodgepole pine to black spruce-lodgepole pine as soil moisture increases. Till deposits appear to become thinner close to the Kakwa River, and the pattern changes to one with pine forest on elevated sites and a mixture of black spruce forest and deciduous shrubland in low-lying areas between subdued ridges.

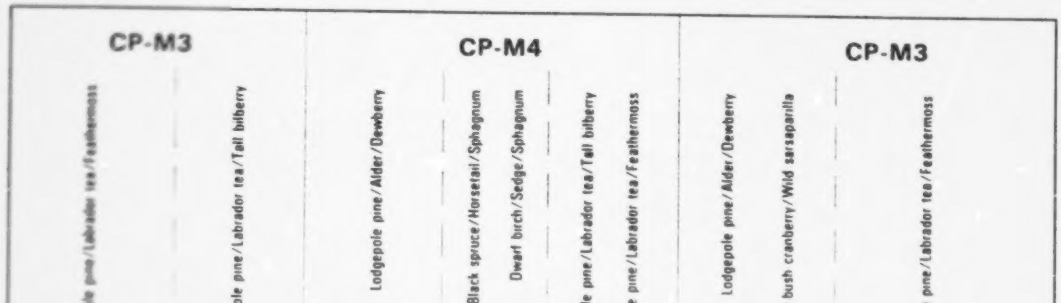

CP-M3
CP-M4
CP-M3
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Alder/Dewberry
Black spruce/Horsetail/Sphagnum
Dwarf birch/Sedge/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Lodgepole pine/Labrador tea/Feathermoss
O.GL
BR.GL
O.GL, BR.GL
GLBR.GL
E.DYB
Peaty Gleysols,
Mesisols
GL.GL
GLBR.GL
O.GL, BR.GL,
E.DYB
O.GL
BR.GL

Figure 74: Schematic Diagram of Ecosections CP-M3 and CP-M4

Physical Conditions:

Continental till is the dominant surficial material on these steeply sloping eroded valley walls of tributaries to the Kakwa River (Figure 74). The till varies in thickness and often contains significant amounts of weathered bedrock on steep terrain. Groundwater seepage is very apparent along most slopes where bedrock is near the surface.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/Xv over R	SiCL-SiL	15-45	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/Alder/Dewberry Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Dewberry
			4	GL.GL, GLBR.GL	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry
Ov over M	Mesic over SiCL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/sedge Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Exposure, groundwater seepage and variation in the depth of surficial materials, creates a heterogeneous vegetation pattern. Open black spruce forest, deciduous shrublands and black spruce-lodgepole pine forest are found on northern and eastern exposures fed with seepage water, while lodgepole pine forest is found on these slopes where seepage is not a factor. Thin surficial deposits on steep southern exposures close to the Kakwa River support aspen forest.

CP-M5

Physical Conditions:

Centered around the headwaters of Redrock Creek, this large catchment basin consists of a complex of thin Continental till, fluvial (slope wash) veneers and, to a lesser extent, thin organic deposits underlain by nearly level to gently sloping bedrock (Figure 68). Residual sandstone materials are commonly exposed on upper slopes where till has been eroded away. Although surficial materials are coarse-textured, pronounced movement of groundwater creates conditions of high moisture availability on lower slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{Xv}}{\text{R}}$	SiCL-kL	2-15	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Tall bilberry/ Five-leaved bramble
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{S-SiCL}}{\text{kL}}$		2-4	O.R, GLCU.R	Dry meadow-fluvial
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{kL}}$	0-2	4-5	GL.R, GLCU.R, Gleysols	Dwarf birch/Sedge Sphagnum

Ecoregion: Subalpine

Ecological Conditions

The occurrence of coarse-textured veneers on slopes receiving seepage water creates an unusual mosaic of open habitats on this landscape. Deciduous shrubland is formed in poorly drained subdued valleys, while the ridges between valleys present a dry environment that supports grasslands of variable composition. Lodgepole pine forest is found on the surrounding well-drained uplands.

CP-M6

Physical Conditions:

Found along the north-facing slopes of the Cutbank River, this system is characterized by very gently to strongly sloping bedrock ridges separated by Boulder Creek (Figure 71). Surficial materials consist primarily of inclined to gently rolling deposits of Continental till and residual sandstone materials. Till deposits are of variable thickness and are comprised of medium to moderately-fine textured materials. Oversteepening of slopes by headwater erosion has led to local slumping and gullying. This has resulted in small areas of colluvial veneers overlying bedrock.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xvb}{R}$	SiL-SiCL	2-30	2-3	O.GL, BR.GL	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Alder/Dewberry
		2-9	3-4	O.GL, BR.GL, GLBR.GL	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss White spruce/Low-bush cranberry/ Dewberry
$\frac{Cv}{R}$	L	16-30	2-3	BR.GL	Lodgepole pine/Alder/Dewberry Aspen/Low-bush cranberry/Dewberry White spruce/Low-bush cranberry/ Dewberry

Ecoregion: Boreal Foothills
Boreal Uplands

Ecological Conditions

Lodgepole pine forest predominates on these relatively cool northern exposures. Black spruce and white spruce forest is found on the lower slopes of tributary valleys where surficial materials are thicker and the soil moisture regime more favorable. Aspen forest is confined to steep upper slopes and is not common.

CP-MC1

Physical Conditions:

The gently to very strongly sloping headwater valley walls of the North Cutbank River make up this system (Figure 75). In the upper reaches of this system, centered around Nose Lake, gently to moderately sloping bedrock is overlain by thin till deposits of Cordilleran origin. On lower slope positions, these moderately fine-textured till deposits are overlain by fluvial veneers of variable thicknesses derived from slope wash. In the southern portions, moderately to very strongly sloping bedrock is overlain by a combination of thin Cordilleran tills and colluvial materials derived from till and weathered bedrock. These steeper slopes are prone to slumping. Numerous fan-like deposits comprised of both fluvial and colluvial materials occur on lower slope positions throughout the system. Thick organic accumulations of sphagnum peat occur adjacent to the North Cutbank River and Nose Lake.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mv}{R}$	SiCL	6-15	2-3	BR.GL	Lodgepole pine/White-flowered rhododendron/Feathermoss Lodgepole pine/Tall bilberry/ Five-leaved bramble
$\frac{Cv}{R}$	SiCL-SCL	16-45	2-3	O.DYB, E.DYB, O.R	Engelmann x White spruce/ Feathermoss Lodgepole pine/Tall bilberry/ Five-leaved bramble Lodgepole pine/Hairy wild rye
$\frac{Ovb}{F}$	$\frac{Fibric}{SL}$	0-2	5-6	Fibrisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Till deposits on uplands support lodgepole pine forest, while colluvial deposits are characterized by a mixture of lodgepole pine and Engelmann spruce forest. The greater incidence of spruce on colluvium is probably a result of the greater thickness and more favorable moisture regime of these deposits. Dwarf birch shrubland is found on peat along valley bottoms.

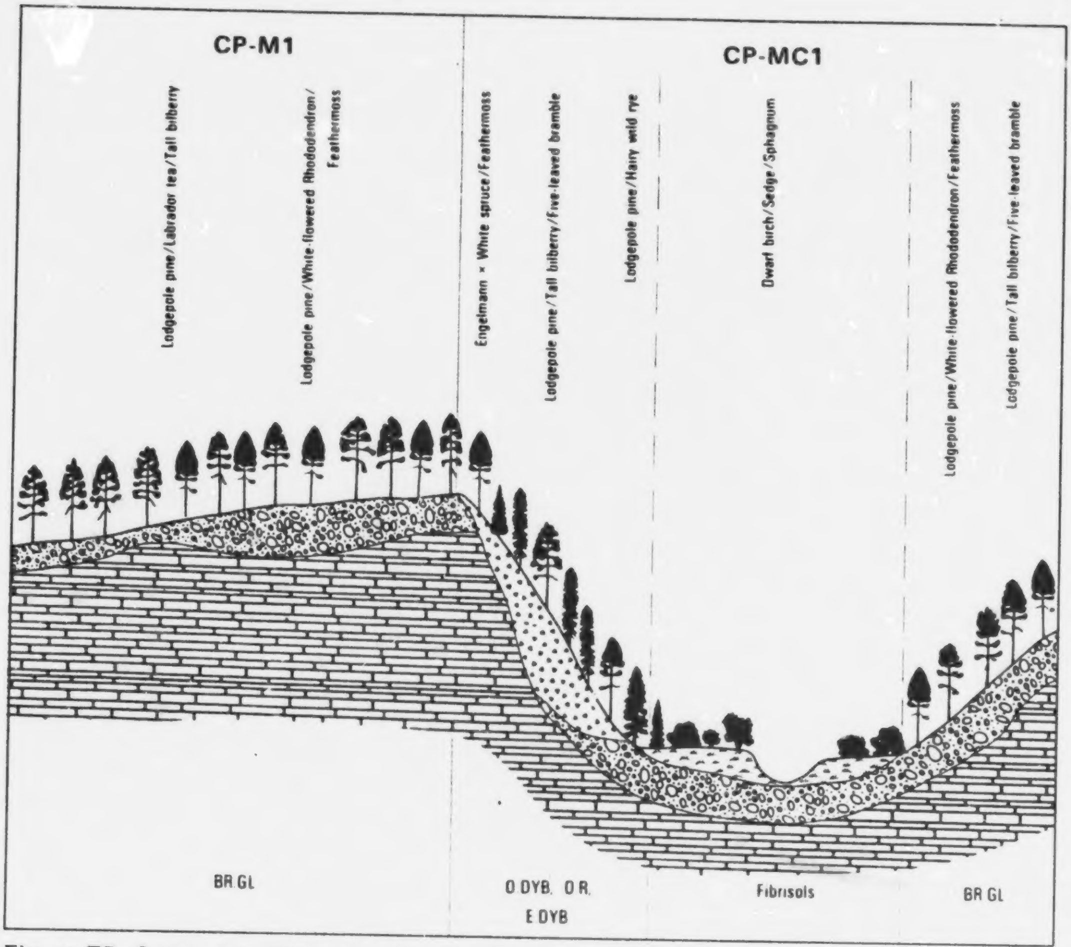

CP-M1
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/White-flowered Rhododendron/Feathermoss
CP-MC1
Engelmann × White spruce/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/Hairy wild rye
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
BR.GL
O.DYB, O.R,
E.DYB
Fibrisols
BR.GL

Figure 75: Schematic Diagram of Ecosections CP-MC1 and CP-M1

CP-M01

Physical Conditions:

Located north of the Kakwa river and east of Route Creek, this system consists of a complex of Continental tills on upland sites with extensive organic accumulations in depressional terrain and valley bottoms (Figure 67). Medium to moderately fine-textured till deposits are of variable thickness and are often found in association with residual sandstone materials.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\mathrm{Mvb}}{\mathrm{R}}$	SiCL-KL	2-9	2-4	O.GL, GL.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Black spruce-Lodgepole pine/Tall bilberry
$\frac{\mathrm{Ovb}}{\mathrm{M}}$	$\frac{\mathrm{Mesic}}{\mathrm{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce-Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

The occurrence of fairly extensive peat deposits supporting black spruce muskeg and deciduous shrublands on valley bottom distinguishes this ecosection from the surrounding landscape. Lodgepole pine forest typical of the region occurs on upland sites.

2.2.3 Deep Valley Plateau Subregion (Ecodistrict)

This level to undulating plateau which is located east of the Simonette River (Fig. 76) was not extensively altered by glaciation. It has a cap of highly cemented preglacial (tertiary) gravels which, combined with the slow permeability of the underlying Paskapoo bedrock, causes restricted drainage over most of the subregion. Elevations range from 1 150 m to 1 370 m and the subregion falls within the Boreal Uplands and Subalpine ecoregions.

Preglacial gravels and peat are the major surficial materials on the plateau, with stony colluvium and till in valleys of tributaries to the Simonette River, and outwash sand and gravel on the southern portion of the plateau.

The poorly drained portions of the plateau support a mixed muskeg of deciduous shrublands, sedge meadows and open black spruce and larch stands. Gravel ridges on the plateau support a mixed forest of black spruce and lodgepole pine, while lodgepole pine forest is found on valley slopes and white spruce on valley floors.

The Deep Valley Plateau subregion is divided into five systems/ecosections. Their characteristics are outlined briefly following Table 16. One fluvial system was identified within the subregion (F29). Its characterisitcs are discussed in Section 2.5, Volume I of the report.

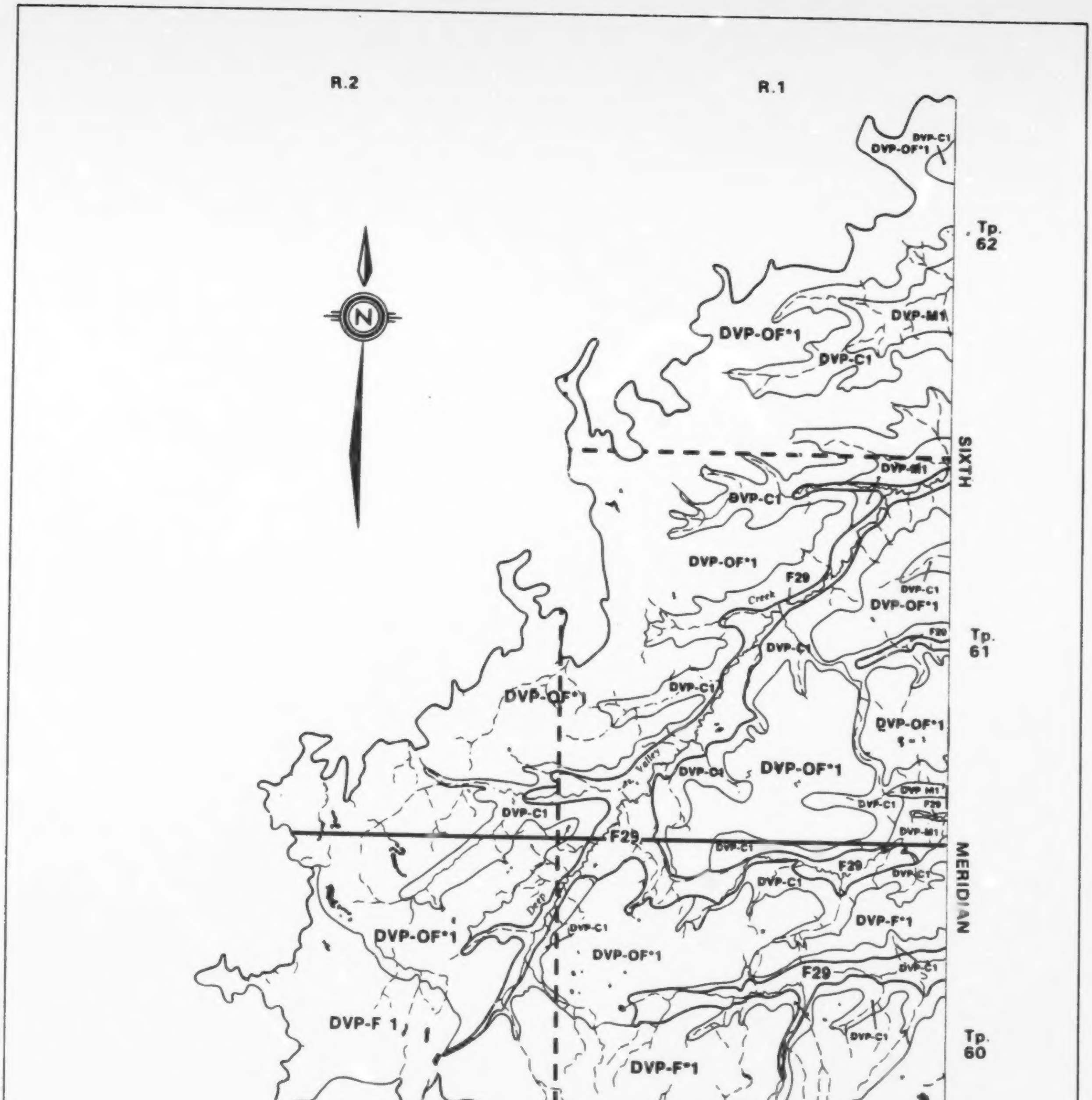

R.2
R.1
DVP-C1
DVP-OF°1
Tp. 62
DVP-M1
DVP-OF°1
DVP-C1
SIXTH
DVP-M1
DVP-C1
DVP-OF°1
F29
Creek
DVP-C1
DVP-OF°1
F29
Tp. 61
DVP-C1
DVP-C1
DVP-OF°1
DVP-OF°1
Valley
DVP-C1
DVP-OF°1
DVP-M1
DVP-C1
F29
DVP-M1
DVP-C1
F29
MERIDIAN
DVP-C1
F29
DVP-C1
Deep
DVP-C1
DVP-F°1
DVP-OF°1
DVP-OF°1
F29
DVP-C1
DVP-F 1
DVP-C1
Tp. 60
DVP-F°1
SCALE 1 : 150 000
km. 3 2 1 0 1 2 3 4 5 6 km.
mi. 1 0 1 2 3 mi.
West of the Sixth Meridian
DVP-GFO1
DVP-C1
Tp. 59

Figure 76: Deep Valley Plateau Subregion (DVP)

Table 16

SUMMARY OF ECOSECTIONS IN THE DEEP VALLEY PLATEAU SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
DVP-C1	Steep valley walls	Rubbly colluvium	Lodgepole pine forest
DVP-F*1	Gently undulating plateau	Preglacial outwash gravels	Lodgepole pine-black spruce forest and dwarf shrublands
DVP-GF01	Outwash plain	Outwash gravels and peat	Lodgepole pine and black spruce-pine forest, muskeg
DVP-M1	Undulating valley bottoms	Medium-textured till with sandy overlays	Lodgepole pine and white spruce forest
DVP-OF*1	Gently undulating plateau	Peat and preglacial outwash gravels	Muskeg, black spruce, lodgepole pine forest

DVP-C1

Physical Conditions:

This system consists of the moderate to steep sloping valley walls of the small streams which flow across the subregion (Figure 77). Along these narrow valley walls the dominant deposits consist of colluvial veneers overlying bedrock. Much of the material is a matrix of preglacial gravels, till and unconsolidated bedrock rubble. Large areas of these valley walls show evidence of gullying and minor slumping.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cv}{R}$	gSL	10-45	1-3	O.R, E.EB, BR.GL	Lodgepole pine/Alder/Dewberry Lodgepole pine/Hairy wild rye White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

Exposure has a significant effect on forest composition within these valleys. Southern exposures are characterized by lodgepole pine forest with a grassy understory, while a mixture of lodgepole pine and white spruce forest with a richer understory is found on northern exposures.

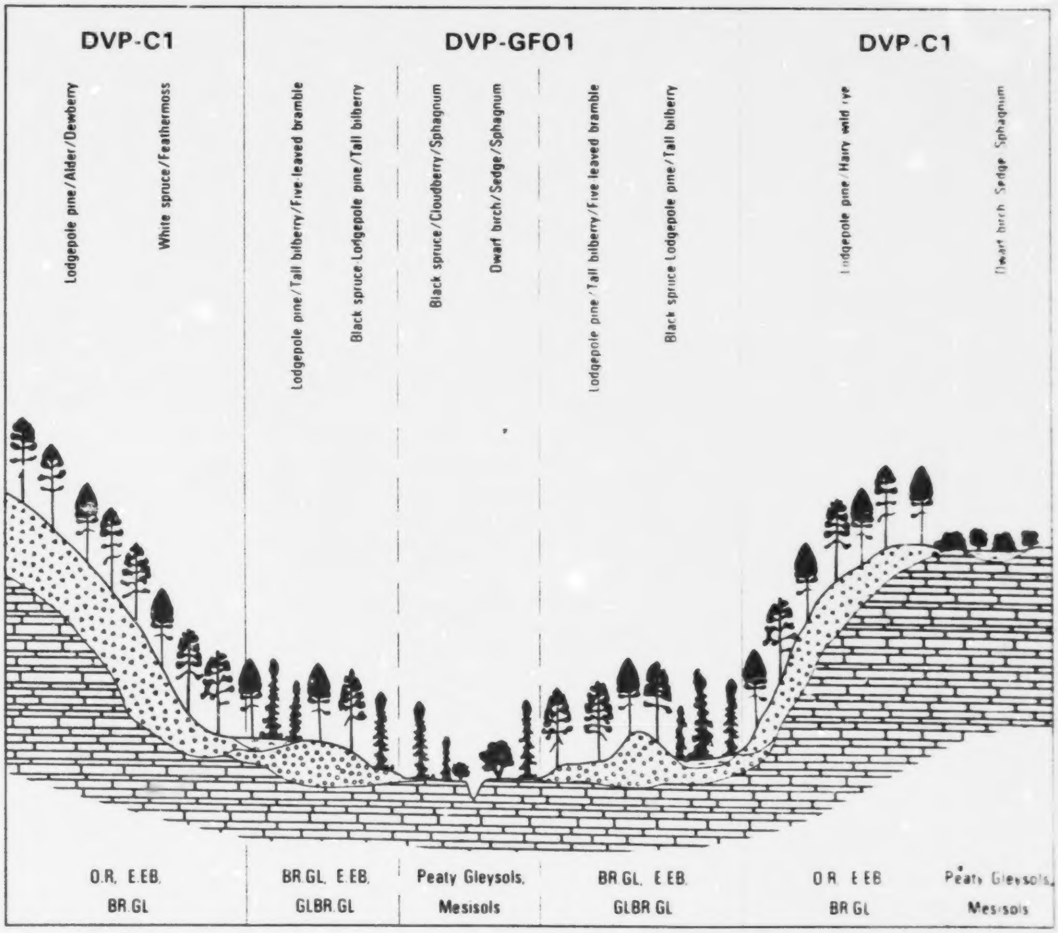

DVP-C1
DVP-GFO1
DVP-C1
Lodgepole pine/Alder/Dewberry
White spruce/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Tall bilberry/Five leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/Hairy wild rye
Dwarf birch Sedge Sphagnum
O.R, E.EB,
BR.GL
BR.GL, E.EB,
GLBR.GL
Peaty Gleysols,
Mesisols
BR.GL, E.EB,
GLBR.GL
O.R, E.EB
BR.GL
Peaty Gleysols,
Mesisols

Figure 77: Schematic Diagram of Ecosections DVP-C1 and DVP-GFO1

Physical Conditions:

This system occupies the southern portion of the plateau (Figure 78). Strongly cemented pre-glacial gravels are the dominant surficial materials and are occasionally overlain by thin till deposits of Continental origin. These till deposits were pushed up by glacial ice sheets that occupied adjacent valley positions. Peat-filled glacial meltwater channels are common across the landscape. Imperfect to poorly drained conditions predominate over most of this area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
F*	kSL	2-9	4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Tall bilberry
Mv/F*	SiL/kSL	2-9	2-4	BR.GL, PZ.GL, GLBR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Lodgepole pine/White-flowered rhododendron Black spruce-Lodgepole pine/Tall bilberry
Ov/F*	Mesic/kSL	0-2	6	Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

High soil moisture, due to the impermeability of underlying materials causes black spruce-lodgepole pine forest to predominate on this portion of the plateau. More mesic lodgepole pine forest is confined to elevated ridges of till and is not extensive. Dwarf birch shrublands are found on the floors of glacial meltwater channels where soil moisture is excessive.

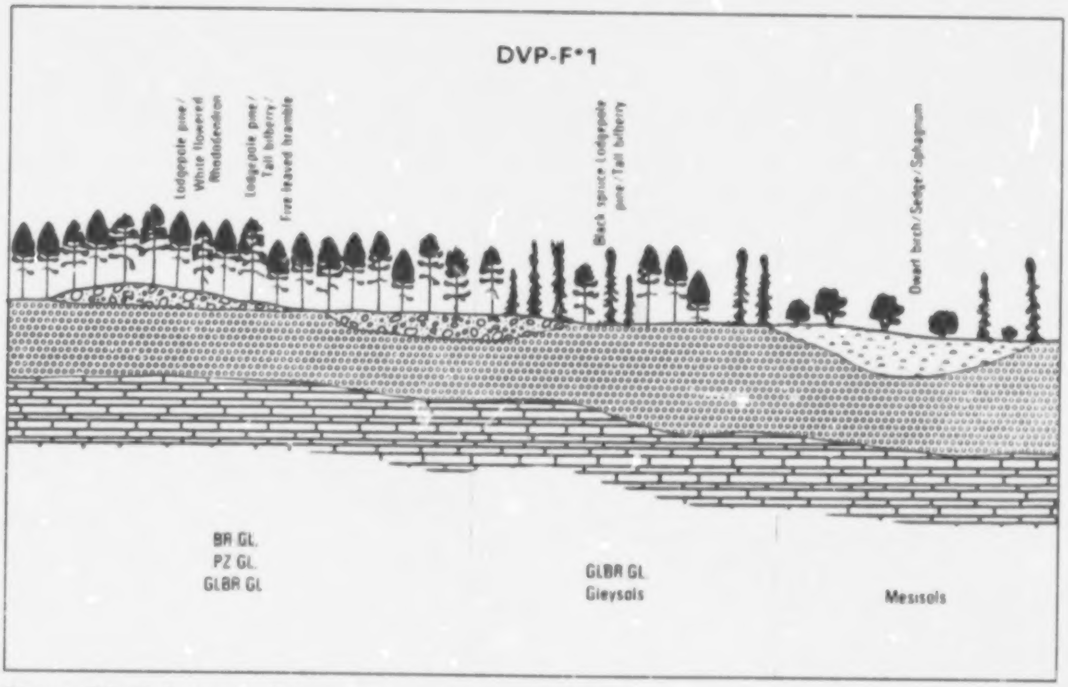

DVP-F*1
Lodgepole pine/White flowered Rhododendron
Lodgepole pine/Tall bilberry/Five leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Dwarf birch/Sedge/Sphagnum
BR GL
PZ GL
GLBR GL
GLBR GL
Gleysols
Mesisols

Figure 78: Schematic Diagram of Ecosection DVP-F*1

DVP-GF01

Physical Conditions:

This hummocky to subdued glaciofluvial outwash plain occurs along the southeastern edge of the plateau (Figure 79). Coarse-textured glaciofluvial materials overlie pre-glacial gravels. Numerous kettle depressions occur throughout the area and contain significant amounts of sphagnum peat. The area has also been extensively eroded by many small, sinuous glacial meltwater channels. Drainage conditions are highly varible but imperfectly drained conditions predominate.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GFv/F*	S/KSL	0-2	3-4	BR.GL, GLBR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Black spruce-Lodgepole pine/Tall bilberry
GF	S	2-5	2-3	BR.GL, E.EB	Lodgepole pine/Tall bilberry/Five-leaved bramble
Ovb/F*	Mesic/KSL	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forest is more common here than elsewhere on the plateau because of the relative dryness of sandy glaciofluvial deposits. Black spruce-lodgepole pine forest occurs where these deposits are thin, and dwarf birch-sedge shrubland is found on peat deposits in kettles and outwash channels.

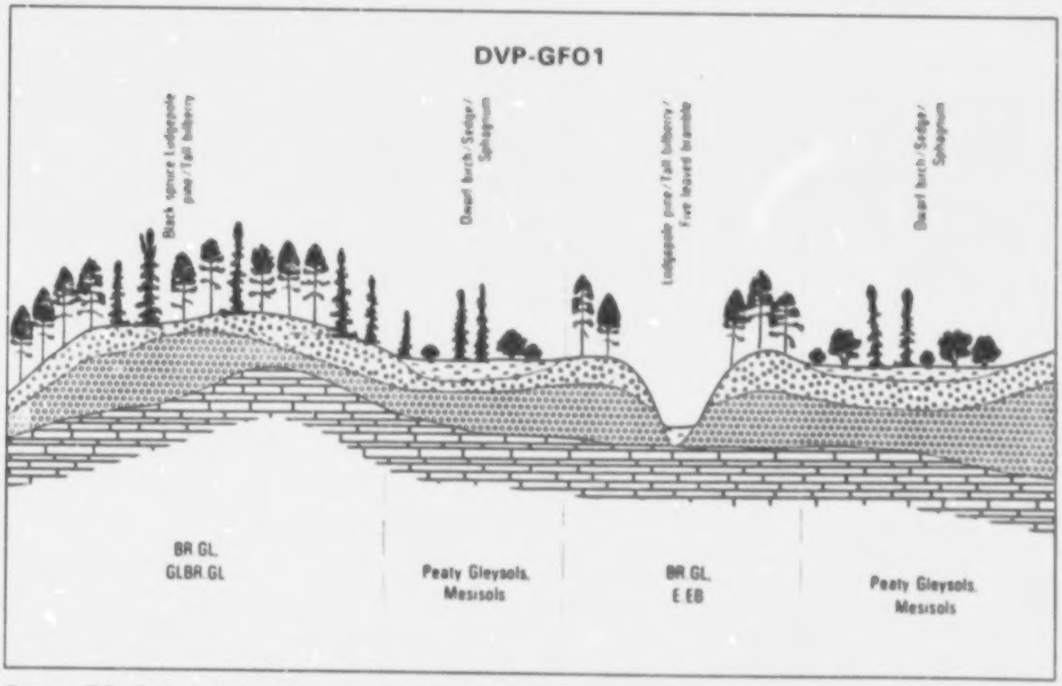

DVP-GFO1
Black spruce Lodgepole pine/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Tall bilberry/Five leaved bramble
Dwarf birch/Sedge/Sphagnum
BR.GL
GLBR.GL
Peaty Gleysols,
Mesisols
BR.GL
E.EB
Peaty Gleysols,
Mesisols

Figure 79: Schematic Diagram of Ecosection DVP-GFO1.

DVP-M1

Physical Conditions:

Within the valley bottoms of some tributaries, areas of undulating to rolling ground moraine can often be found (Figure 80). These deposits are not extensive and often are overlain by thin fluvial veneers derived from slope wash and periodic flooding. The high cobble content of the materials is the result of mixing of pre-glacial gravels into the till by glacial action. Groundwater seepage tracks are common across the area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M	KSiL-KSL	2-15	2-3	O.GL, BR.GL	Lodgepole pine/Labrador tea/ Feathermoss
			3-4	O.GL, GL.GL	Lodgepole pine/Alder/Dewberry
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{SL}}{\text{KSL}}$	2-9	3-4	CU.R, BR.GL, E.EB, GL.CUR, GL.CUR, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

Most of these valley floor deposits are covered with lodgepole pine forest. White spruce stands occur in groundwater discharge areas and on recent alluvial deposits adjacent to stream courses.

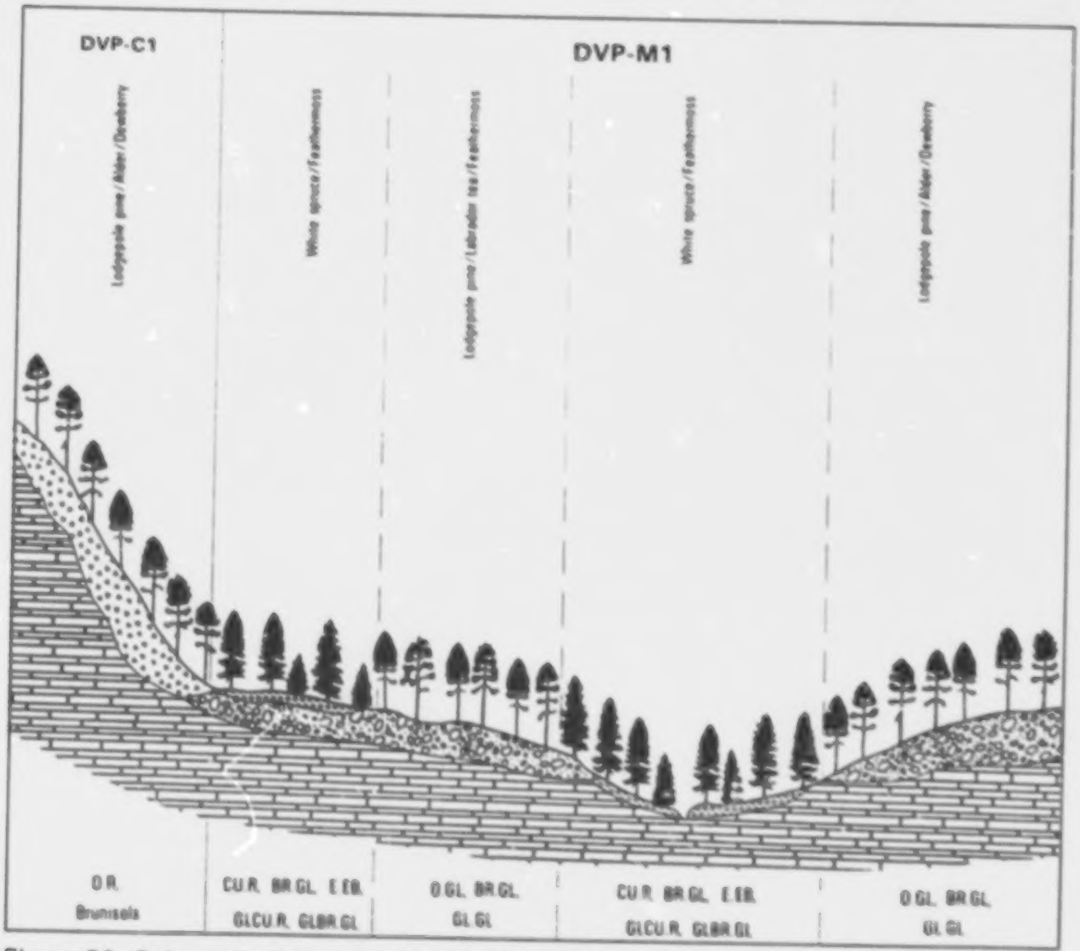

DVP-C1
DVP-M1
Lodgepole pine/Alder/Dewberry
White spruce/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Lodgepole pine/Alder/Dewberry
O.R.
Brunisols
CU.R. BR.GL. E.EB.
GL.CU.R. GLBR.GL
O.GL. BR.GL.
GL.GL
CU.R. BR.GL. E.EB.
GL.CU.R. GLBR.GL
O.GL. BR.GL.
GL.GL

Figure 80: Schematic Diagram of Ecosection DVP-M1

DVP-OF*1

Physical Conditions:

This level to undulating plateau is characterized by strongly cemented pre-glacial gravels which are overlain extensively by accumulations of sohagnum peat (Figure 81). The system contains a large number of sinuous glacial meltwater channels. Cementation of gravels and the presence of slowly permeable bedrock near the surface creates poorly drained conditions over most of this ecosection.

MATERIALS	TEXTURE	SLOPES	DRAINAGE	SOILS	PLANT ASSOCIATION
Ovb/F*	Mesic/gSL	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum
F*	gSL	0-2	4-5	GL.GL, Gleysols	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry

Ecoregion: Boreal Uplands

Ecological Conditions

Excessive soil moisture causes a mixture of sedge, dwarf birch and black spruce-larch fen vegetation to predominate on most of this landscape. Black spruce-lodgepole pine forest occurs on subdued gravel ridges where drainage is somewhat better.

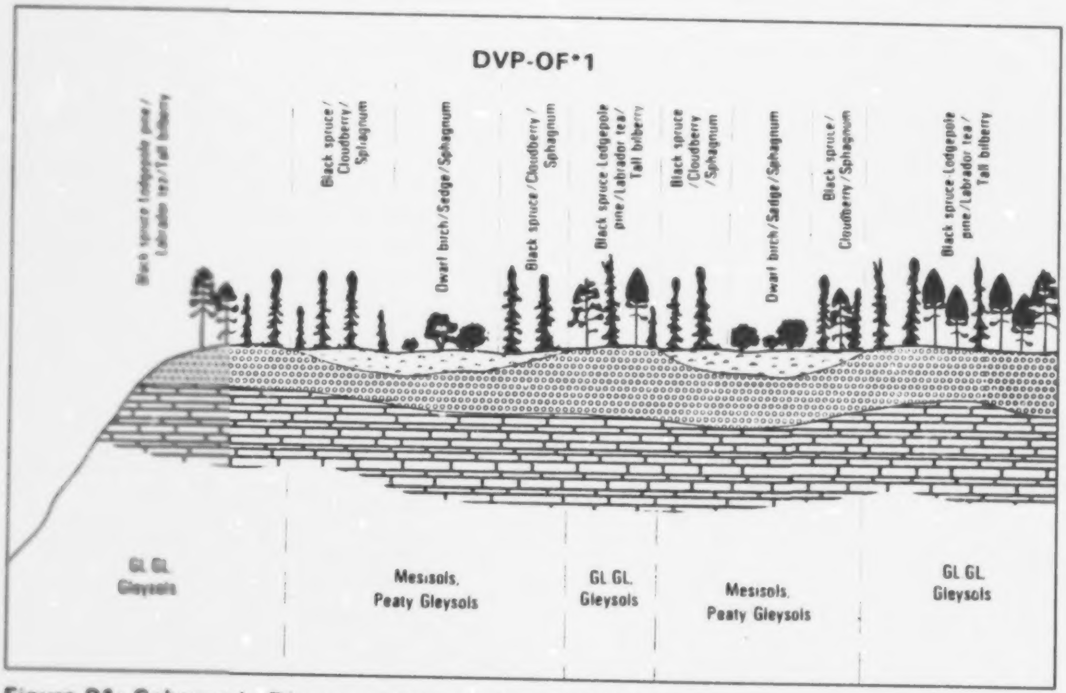

DVP-OF*1
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
Black spruce/Cloudberry/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
Black spruce/Cloudberry/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
GL GL Gleysols
Mesisols, Peaty Gleysols
GL GL Gleysols
Mesisols, Peaty Gleysols
GL GL Gleysols

Figure 81: Schematic Diagram of Ecosection DVP-OF*1

2.2.4 Kakwa Benchlands Subregion (Ecodistrict)

The Kakwa Benchlands are centered around the deeply incised river valleys of the Kakwa and Smoky Rivers (Figure 82). This upland area has been deeply dissected by these rivers and their tributaries, leaving a series of northeast-trending ridges. Elevations range from 820 m to 1 500 m with local relief on the dissected uplands in the order of 200 m. The subregion lies within the Boreal Uplands and Subalpine ecoregions, with aspect, seepage and groundwater discharge having major influences on the pattern of vegetation.

Bedrock of the Paskapoo Formation underlies the subregion, and is exposed extensively along both river valleys. Structural deformation of bedrock, while not as pronounced as it is within the Foothills region, is characteristic of the area. The bedrock is thinly masked by till, with fluting marks in the area indicative of ice movement from north to south.

Surficial materals consist predominantly of continental till, with residual materals exposed on uplands where tills are thin. Lodgepole pine forest dominates on the upland positions. Along valley walls where colluvium and undifferentiated materials are common, vegetation consists of a mixture of black spruce/lodgepole pine, white spruce and lodgepole pine forest. Aspen is common on steep slopes in major river valleys where high winds and southern exposures are influential.

Numerous terraces within both the Kakwa and Smoky valleys consist of both glaciolacustrine and outwash sediments. Vegetation on these

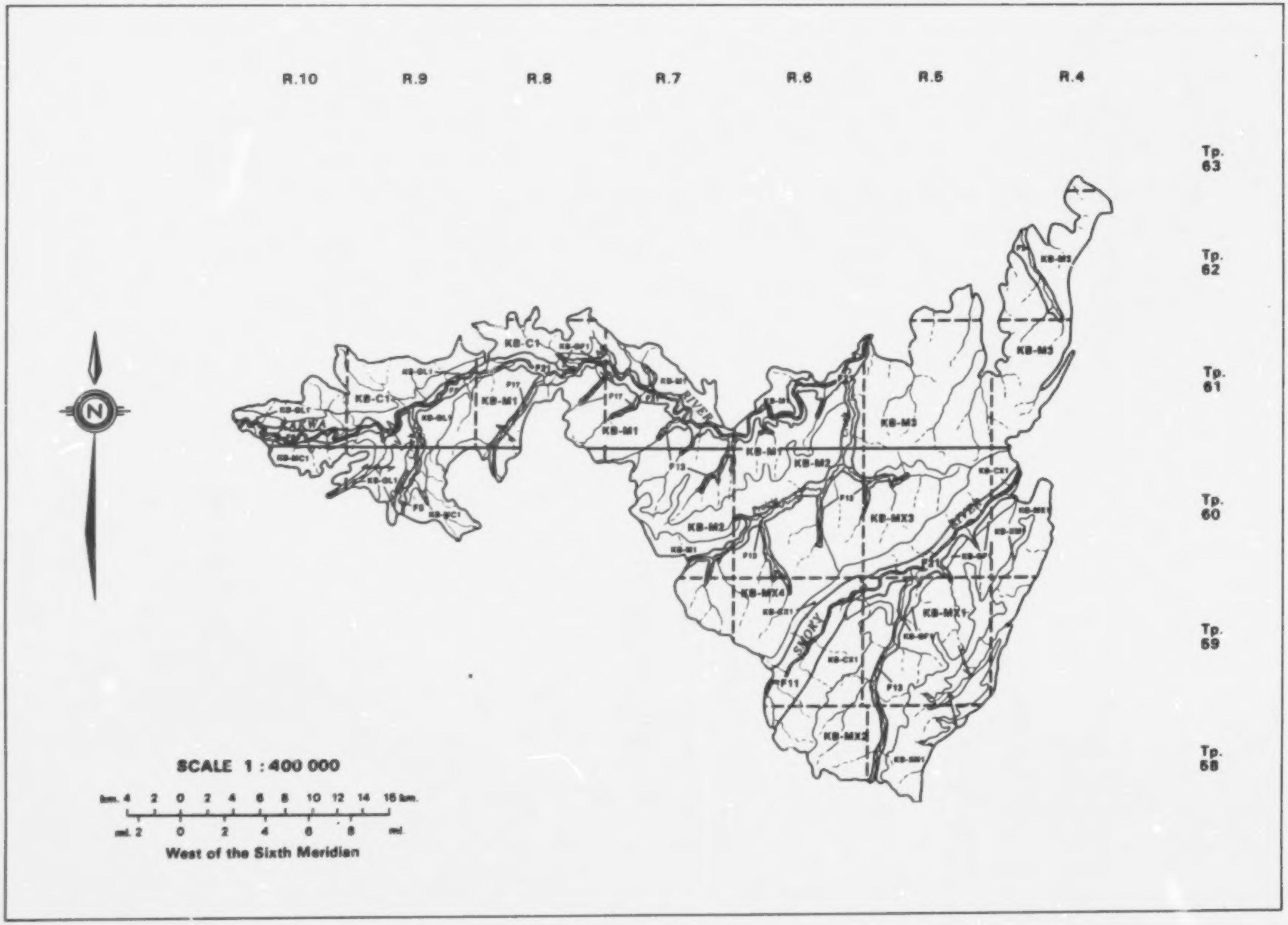

R.10
R.9
R.8
R.7
R.6
R.5
R.4
Tp. 63
Tp. 62
Tp. 61
Tp. 60
Tp. 59
Tp. 58
N
KB-C1
KB-M1
KB-M2
KB-M3
KB-MX1
KB-MX2
KB-MX3
KB-MX4
KB-GL1
KB-MC1
KB-CZ1
F9
F11
F13
F17
F21
KAKWA
RIVER
SMOKY
RIVER
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 82: Kakwa Benchlands Subregion (KB)

portions of the landscape is mixed, with black spruce/pine, aspen/shrubland quite common.

The Kakwa Benchland subregion is divided into twelve ecosections/systems. Generalized descriptions and schematic diagrams follow (Table 17). Seven fluvial systems were identified as crossing the subregion (F8, F11, F13, F17, F18, F12, F22). They are discussed in Section 2.5 of Volume I of the report.

Table 17

SUMMARY OF ECOSECTIONS IN THE KAKWA BENCLANDS SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
KB-C1	Steep, highly eroded slopes	Medium-textured colluvium and till	Aspen and lodgepole pine forest
KB-CX1	Steep, gullied slopes	Medium-textured colluvium and residual materials	Aspen forest
KB-GF1	Level to inclined terraces	Glaciofluvial sand and gravel	Lodgepole pine and aspen forest
KB-GL1	Level terraces	Glaciolacustrine silt and clay	Aspen and lodgepole pine forest, dwarf birch shrublands
KB-M1	Steep upper valley walls	Medium-textured till	Lodgepole pine and black spruce-pine forest, treed muskeg
KB-M2	Moderately sloping plateau	Medium-textured till	Lodgepole pine forest
KB-M3	Rolling ridges	Medium-textured till and peat	Lodgepole pine, black spruce-pine and white spruce forest, shrubby muskeg
KB-MX1	Gentle to steep eroded ridges	Medium-textured till and residual materials	Lodgepole pine forest, shrubby muskeg
KB-MX2	Steep-sided valley and and ridges	Moderately fine-textured till and residual materials	Lodgepole pine and black spruce-pine forests
KB-MX3	Inclined to steep ridges	Moderately fine-textured till and residual materials, and peat	Lodgepole pine and white spruce forest, treed and shrubby muskeg
KB-MX4	Rolling ridges	Medium-textured till and residual materials, and peat	Lodgepole pine and Engelmann spruce Subalpine fir forest, deciduous shrublands, grasslands
KB-XM1	Gently undulating plateau	Medium-textured residual materials and tills	Lodgepole pine and black spruce-pine forest

KB-C1

Physical Conditions

This gently inclined to steeply sloping, highly eroded colluvial slope is located along the north side of the Kakwa River (Figure 83). Moraine is common on lower slope positions while residuum is found on steep upper slopes. Bedrock slumps are common throughout this ecosection.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$, $\frac{\text{Xv}}{\text{R}}$	SiL	15-80	2-3	O.EB, O.DYB, E.EB, E.DYB	Aspen/Buffaloberry/Showy Aster Lodgepole pine/Hairy wild rye Lodgepole pine/Alder/Dewberry
$\frac{\text{Mvb}}{\text{R}}$	SiCL	6-15	2-3	O.GL, BR.GL	Aspen/Buffaloberry/Showy Aster Lodgepole pine/Alder/Dewberry

Ecoregion: Boreal Uplands

Ecological Conditions

Prevailing southern exposures have a substantial influence on the vegetation pattern. Aspen forest is found on steep upper slopes, extending to high elevation because of the drying effects of exposure. Lodgepole pine forest occurs on gentler slopes and in subdued ravines where the soil moisture regime is more favorable. Large, discontinuous patches of deciduous shrubland are found in groundwater catchment areas.

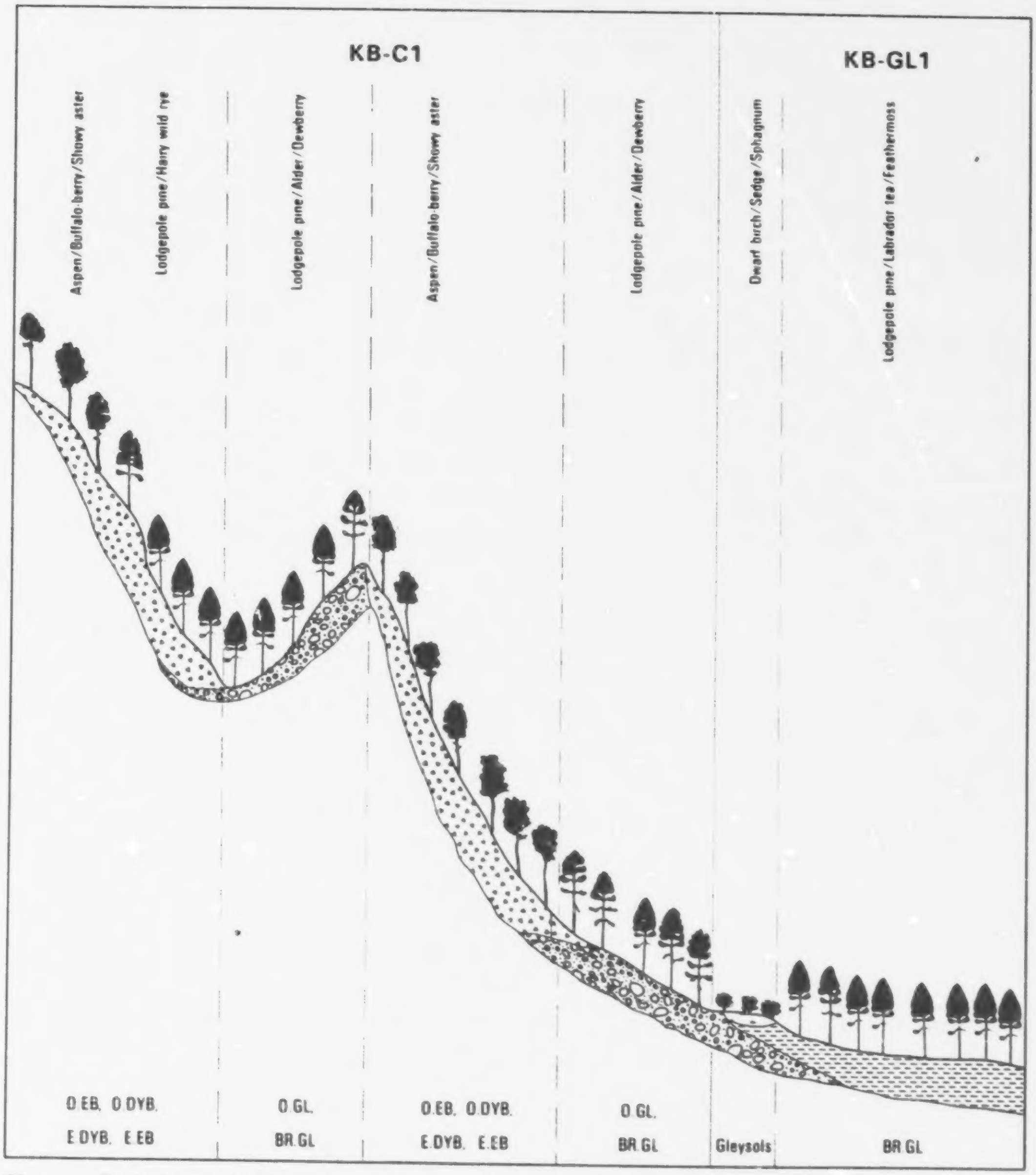

KB-C1
KB-GL1
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Hairy wild rye
Lodgepole pine/Alder/Dewberry
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Alder/Dewberry
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
O.EB, O.DYB,
E.DYB, E.EB
O.GL,
BR.GL
O.EB, O.DYB,
E.DYB, E.EB
O.GL,
BR.GL
Gleysols
BR.GL

Figure 83: Schematic Diagram of Ecosections KB-C1 and KB-GL1

KB-CX1

Physical Conditions:

This system includes steep upper slopes on both sides of the Smoky River Valley. Colluvium derived from till and weathered sandstone and siltstone is the main surficial material, with residual materials exposed on upper slopes. Gullying is more common on the east side than on the west side of the river.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cv}{R}$, $\frac{Xv}{R}$	SaL-SiL	16-70	1-3	O.R, Brunisols	Aspen/Buffaloberry/Showy Aster White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

The relatively warm climate and high winds associated with this large valley causes aspen forest to cover most of the landscape. White spruce stands are confined to northern exposures in gullies. There are a few lodgepole pine stands on gentler slopes in the northern part of the ecosection.

KB-GF1

Physical Conditions:

This system consists of a series of level to strongly inclined, highly eroded glaciofluvial terraces bordering the Smoky River (Figure 84). Surficial materials include coarse textured sands and gravels.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GF	S / gSCL-gSL	0-9	1-3	E.EB, BR.GL	Lodgepole pine/Labrador tea/ Feathermoss Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Uplands

Ecological Conditions

Rapid drainage and the low nutrient status of these coarse-textured materials causes lodgepole pine forest to predominate on these terraces. Aspen stands occur where these terraces have been eroded to expose materials with better moisture-holding ability.

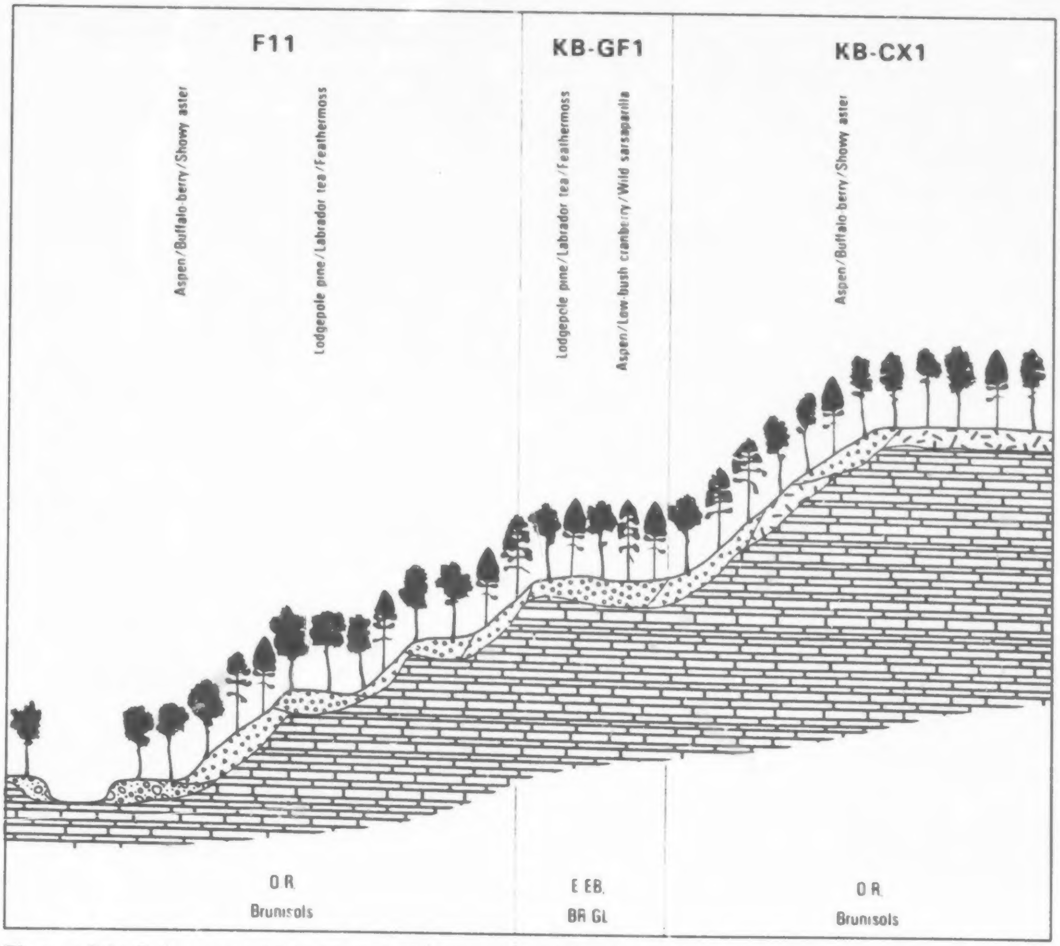

F11
KB-GF1
KB-CX1
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Aspen/Low-bush cranberry/Wild sarsaparilla
Aspen/Buffalo-berry/Showy aster
O.R.
Brunisols
E.EB.
BR.GL
O.R.
Brunisols

Figure 84: Schematic Diagram of Ecosections KB-GF1, KB-CX1 and F11

KB-GL1

Physical Conditions

These glaciolacustrine terraces are located adjacent to the confluence of Copton Creek and the Kakwa River (Figure 83). Thick, medium to fine textured, stratified glaciolacustrine sediments are the principal surficial materials. Minor accumulations of sphagnum peat occur south of the Kakwa River.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GL	SiCL	0-2	2-3	BR.GL	Aspen/Buffaloberry/Showy Aster Lodgepole pine/Labrador tea/ Feathermoss
Ov/GT	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

The relatively coarse-texture of these glaciolacustrine materials allows a mixture of aspen and lodgepole pine forest to predominate on these terraces. Further downstream, on finer materials, black spruce forest is the characteristic vegetation type.

Groundwater accumulation areas, which are common on the south side of the river, support deciduous shrubland.

KB-M1

Physical Conditions:

Situated along the upper valley walls of the Kakwa River, this system consists primarily of till deposits of Continental origin with significant portions of residual sandstone materials and colluvium. Surface expression varies from ridged to strongly inclined with slopes ranging from gentle to very strong (Figure 85). Colluvium and residual sandstone materials are common on steep upper slopes where till deposits have been eroded away. On gentler slopes, till deposits are commonly overlain by thin fluvial veneers derived from slope wash. Gleysols occur at the base of slopes where groundwater discharge is common.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/R, Xb/R	CL-SL	2-30	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/Alder/Dewberry Lodgepole pine/Twisted stalk/Feathermoss Lodgepole pine/Labrador tea Feathermoss Lodgepole pine/Tall bilberry/Five-leaved bramble
Cv/R	SiL	16-45	2-3	E.DYB	Lodgepole pine/Alder/Dewberry
Fv/M	SL/SiL	6-15	3-5	E.EB, CU.R, GLE.EB, Gleysols	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/Labrador tea-Tall bilberry
Ov/M	Mesic/SiL	0-2	5	Peaty Gleysols	Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands
Subalpine

Ecological Conditions

A variety of lodgepole pine communities are found on better drained uplands, but the extensive occurrence of numerous seepage tracks supporting black spruce-lodgepole pine forest and large expanses of open black spruce forest with extensive shrub cover points to the wide-spread influence of groundwater movement in this ecosection.

Physical Conditions:

Consisting of a narrow plateau and side slopes located north of Prairie Creek (Figure 85), this system is nearly level to inclined with slopes varying from gentle to very strong. Continental tills of variable thicknesses are the principal surficial materials, but residual sandstone materials occur on side slopes where tills have been eroded.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xvb}{R}$	kSiL-SL	9-30	2-4	BR.GL, E.DYB, GLBR.GL	Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/White-flowered rhododendron/Feathermoss Lodgepole pine/ Alder/Dewberry Lodgepole pine/Twisted stalk/ Feathermoss

Ecoregions: Boreal Uplands
Subalpine

Ecological Conditions

A lower incidence of groundwater discharge distinguishes this ecosection from the preceding one (KB-M1). Lodgepole pine communities predominate on well drained uplands, and deciduous shrubland is confined to a few small slumps where groundwater accumulates. A few white spruce stands are found on lower slopes.

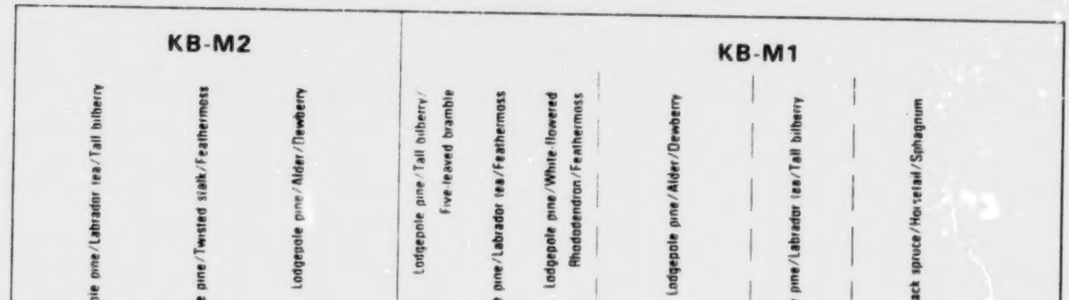

KB-M2
KB-M1
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Twisted stalk/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Alder/Dewberry
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Horsetail/Sphagnum
E.DYB
E.EB, CU.R,
Gleysols

Figure 8 atic Diagran sectic M1 and KB-M2

KB-M3

Physical Conditions:

This subdued to ridged upland area (Figure 86) separates the Kakwa from the Smoky River and consists of a series of broad, northeast trending bedrock ridges. Surface expression is inclined to rolling. Bedrock ridges are overlain by Continental tills of variable thickness and are commonly overlain on lower slope positions by thin fluvial veneers. Seepage is a common feature of slopes. Local colluvial materials derived from weathered tills are the result of slope failure.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SiL-SL	15-30	3-4	O.GL, BR.GL	White spruce/Feathermoss White spruce/Low-bush cranberry/Dewberry
		2-30	2-4	O.GL, BR.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Labrador tea/Feathermoss
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{SL}}{\text{SiL}}$	2-9	4-5	GL.GL, Gleysols	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry White spruce/Common horsetail

Ecoregion: Boreal Uplands
Boreal Foothills

Ecological Conditions

White spruce forest predominates on the side slopes of these ridges, where moderate amounts of groundwater discharge create a favorable moisture regime. A mixture of black spruce-pine forest, white spruce forest and deciduous shrubland is found in groundwater discharge areas on lower slopes. Pure lodgepole pine forest is confined to narrow, well-drained ridgetops.

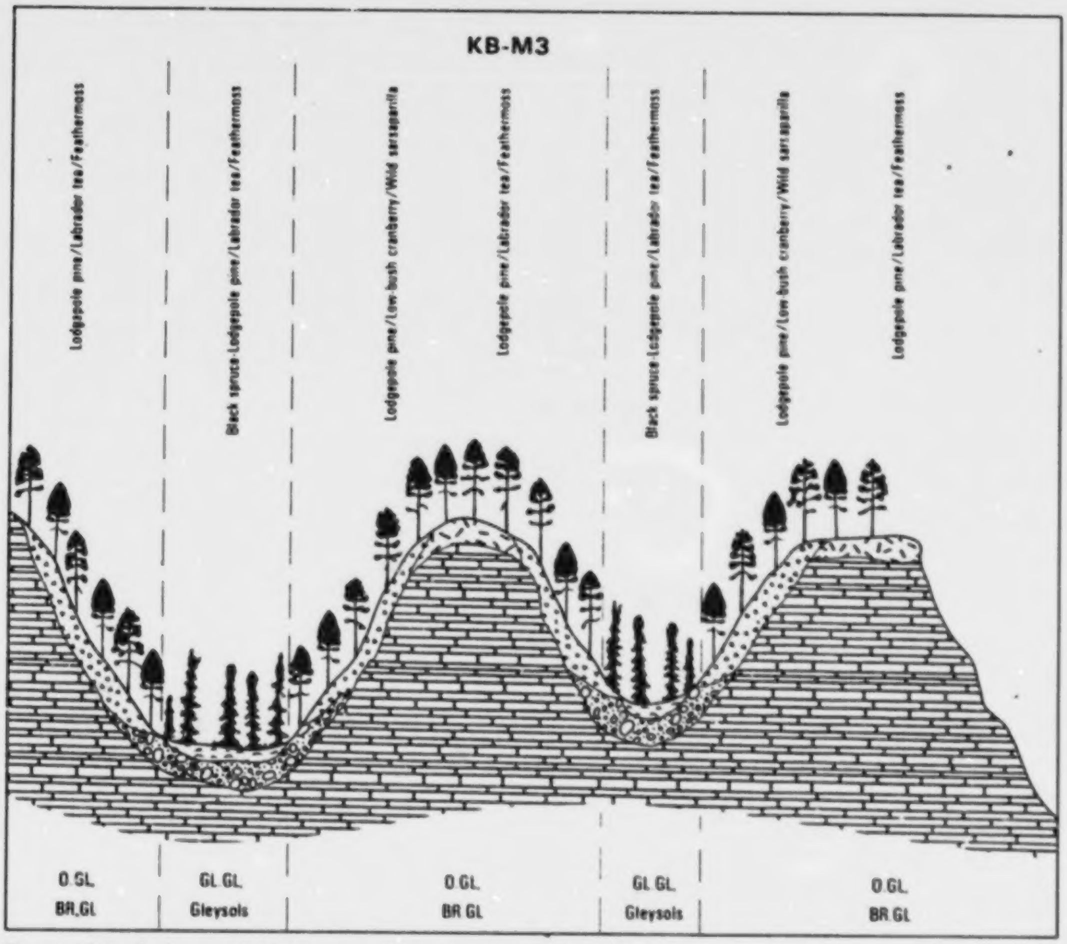

KB-M3
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Labrador tea/Feathermoss
O.GL.
BR.GL
GL.GL.
Gleysols
O.GL.
BR.GL
GL.GL.
Gleysols
O.GL.
BR.GL

Figure 86: Schematic Diagram of Ecosection KB-M3

KB-MX1

Physical Conditions:

These are the side slopes of a highly dissected ridge (Figure 87) separating Bolton and Norris Creek watersheds and consists of a complex of Continental tills and residual sandstone materials overlying bedrock. Residuum is common on steeper topography where till deposits have been eroded. Because of the very strongly sloping topography and pronounced seepage, a significant amount of colluvium derived from weathered bedrock and till deposits occurs where bedrock has failed. Surficial materials are of variable thickness, with deposits generally thickest on lower slope positions and valley bottoms. Surface expression is inclined and ridged with slopes ranging from gentle to very strong.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xvb}{R}$	SiCL-kSiL	6-30	2-4	BR.GL, O.GL, GL.GL	Lodgepole pine/Twisted stalk/ Feathermoss Lodgepole pine/Alder/Dewberry White spruce/Feathermoss Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
$\frac{Cv}{R}$	kSiL	16-45	1-3	O.R., O.EB	Lodgepole pine/Hairy wild rye Aspen/Buffaloberry/Showy aster White spruce/Feathermoss
$\frac{Ov}{M}$	$\frac{Mesic}{kSiL}$	0-2	5	Peaty Gleysol	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

A mixture of lodgepole pine and white spruce forest is found along Bolton Creek Valley where till deposits are relatively thick. Farther west in the valley of Norris Creek, thinner materials, more rugged topography and pronounced groundwater movement combine to produce a more heterogeneous vegetation pattern. Lodgepole pine forest predominates on well-drained uplands, black spruce-pine forest and deciduous shrublands are found in groundwater discharge areas, and aspen stands occur on steep southern exposures.

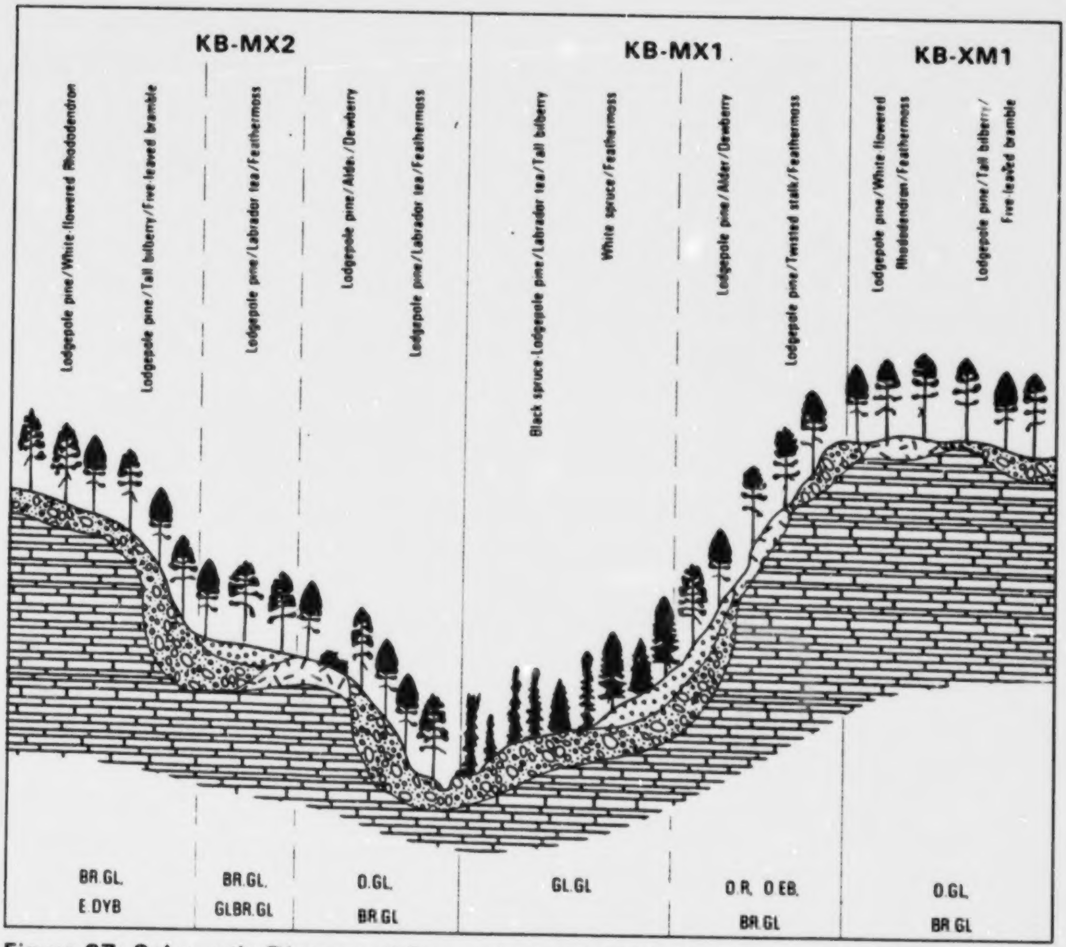

KB-MX2
Lodgepole pine/White-flowered Rhododendron
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
KB-MX1
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
White spruce/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Twisted stalk/Feathermoss
KB-XM1
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
BR.GL.
E.DYB
BR.GL.
GL.BR.GL
O.GL.
BR.GL
GL.GL
O.R. O.EB.
BR.GL
O.GL.
BR.GL

Figure 87: Schematic Diagram of Ecosections KB-MX1, KB-MX2 and KB-XM1

KB-MX2

Physical Conditions:

This north-trending bedrock ridge (Figure 87) occurs west of Norris Creek and consists of a complex of Continental tills and residuum of variable thicknesses overlying bedrock. Till deposits are generally thicker in valley bottoms with residual sandstone materials occurring on upper slope positions where till deposits are either thin or have been eroded. Seepage is common and fluvial veneers derived from slope wash commonly overlie till deposits on lower slope positions. A small basin-like feature in the landscape contains significant glaciofluvial deposits which resulted from the overflow of glacial meltwaters from adjacent valleys into Norris Creek valley. The combination of fluting marks and small eskers produce a ridged surface expression over most of this system.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xvb}{R}$	SiCL	2-45	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/Labrador tea/Feathermoss Lodgepole pine/White-flowered rhododendron/Feathermoss Lodgepole pine/Alder/Dewberry Lodgepole pine/Tall bilberry/Five-leaved bramble
$\frac{GFvb}{M}$	$\frac{SL}{SiCL}$	2-15	2-3	BR.GL, GLBR.GL	Lodgepole pine/Labrador tea/Feathermoss
$\frac{Fv}{M}$	$\frac{SL}{SiCL}$	0-6	3-4	CU.R, BR.GL, GLCU.R, Gleysols	Black spruce/Lodgepole pine/Labrador tea/Tall bilberry

Ecoregions: Boreal Uplands
Subalpine

Ecological Conditions

Lodgepole pine forest predominates in the headwater portions of this valley but closer to the Smoky River, variation in moisture regimes and the occurrence of fire creates a more complex vegetation pattern. Black spruce-pine forest is found in groundwater discharge areas while slopes that have been burned currently support dense shrubland dominated by alder.

KB-MX3

Physical Conditions:

This system consists of a series of north-trending bedrock ridges on which Continental tills and residual sandstone materials thinly mask the underlying bedrock (Figure 88). Surface expression is inclined to ridged with slopes ranging from gentle to strong. Residuum is most common on upper slope positions where tills are either thin or have been eroded. Fluvial veneers derived from slope wash commonly overlie till deposits on lower slope positions. Relatively deep accumulations of sphagnum peat occur locally in narrow valley bottoms. Groundwater discharge is common on lower slopes

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{Xvb}}{\text{R}}$	SiL-SL	9-30	2-3	O.GL, BR.GL, E.DYB, E.EB	Lodgepole pine/Alder/Dewberry/ Lodgepole pine/Twisted-stalk/ Feathermoss
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{S}}{\text{SiL}}$	2-15	3-4	E.DYB, E.EB, CU.R, GLE.EB, GLCU.R	Lodgepole pine/Labrador tea/ Feathermoss White spruce/Feathermoss
$\frac{\text{Ovb}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Topographically-controlled variation in soil moisture controls the pattern of vegetation, with lodgepole pine forest on well-drained bedrock ridges and open black spruce forest and shrubland on poorly-drained valley bottoms. Exposure has a minor effect because of the north-south orientation of these valleys.

KB-MX4

Physical Conditions:

This bedrock controlled upland area occurs immediately south of Prairie Creek and is characterized by north-trending bedrock ridges separated by narrow valleys (Figure 88). Surface expression is inclined to rolling and slopes vary from gentle to very strong.

Surficial materials are of variable thickness and consist chiefly of Continental tills and residual sandstone materials, the latter occurring locally on steep slopes. Till deposits overlain by fluvial veneers derived from slope wash occur on lower slope positions. Groundwater discharge is pronounced in these areas.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}, \frac{\text{Xvb}}{\text{R}}$	SiL-SL	15-45	1-3	BR.GL, E.DYB E.EB	Lodgepole pine/White-flowered rhododendron/Feathermoss Engelmann spruce-Subalpine fir/White-flowered rhododendron/Feathermoss Lodgepole pine/Labrador tea/Feathermoss Lodgepole pine/Hairy wild rye
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{SL}}{\text{SiL}}$	0-6	3-4	CU.R, GLCU.R, Gleysols	Dry meadow-fluvial
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiL}}$	0-6	5-6	Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregions: Subalpine
Boreal Uplands

Ecological Conditions

The occurrence of lodgepole pine and Engelmann spruce-subalpine fir forest on well-drained ridges reflects the regional climate, but local patterns of erosion, deposition and groundwater movement create a heterogeneous vegetation pattern within valleys. Upper, eroded slopes are quite dry and support a mixture of open pine forest and dry grassland. Valley bottoms have a mixture of dwarf birch shrubland on organic soils in groundwater discharge areas, and dry grassland communities on thick, relatively well-drained slope wash deposits.

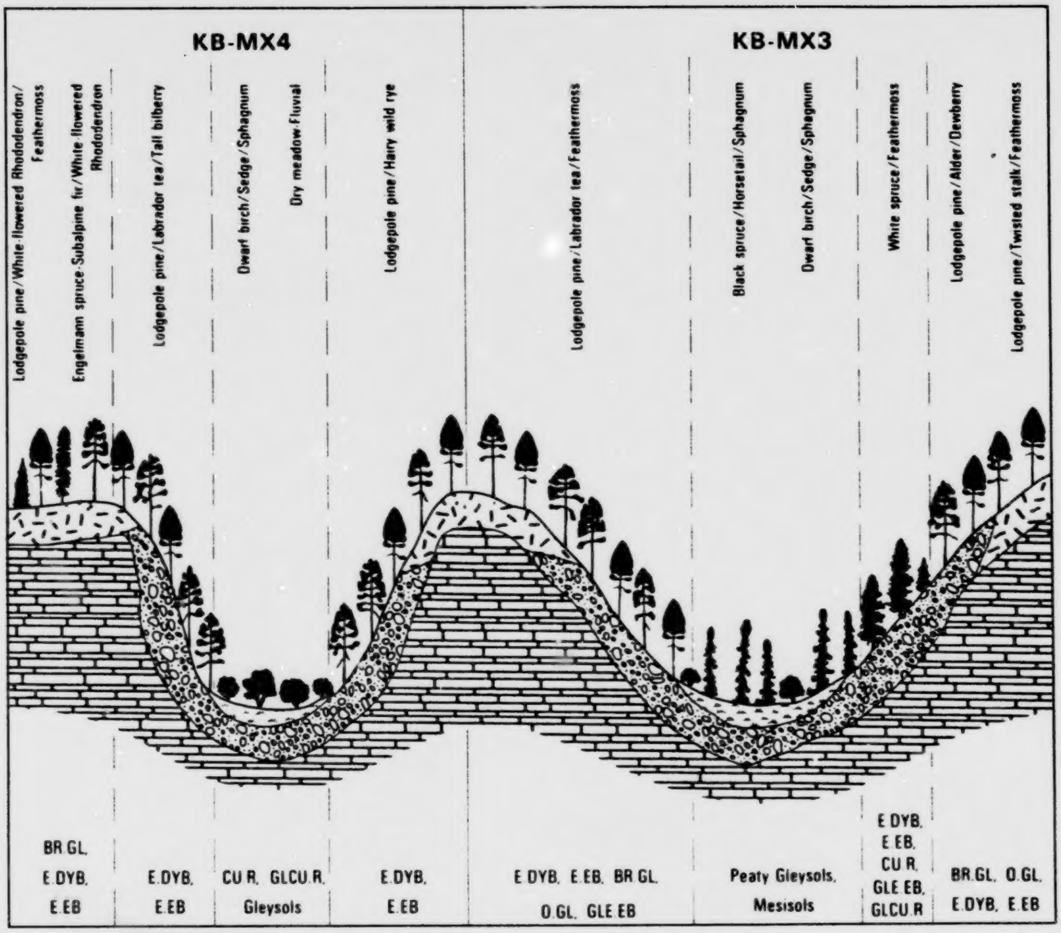

KB-MX4
KB-MX3
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Engelmann spruce-Subalpine fir/White-flowered Rhododendron
Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Dry meadow-Fluvial
Lodgepole pine/Hairy wild rye
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Horsetail/Sphagnum
Dwarf birch/Sedge/Sphagnum
White spruce/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Twisted stalk/Feathermoss
BR.GL. E.DYB. E.EB
E.DYB. E.EB
CU.R. GLCU.R. Gleysols
E.DYB. E.EB
E.DYB. E.EB. BR.GL. O.GL. GLE.EB
Peaty Gleysols, Mesisols
E.DYB. E.EB. CU.R. GLE.EB. GLCU.R
BR.GL. O.GL. E.DYB. E.EB

Figure 88: Schematic Diagram of Ecosections KB-MX3 and KB-MX4

KB-XM1

Physical Conditions:

This subdued to gently undulating plateau remnant acts as a drainage divide between Norris and Bolton Creek (Figure 87). Surficial materials consist chiefly of residual sandstone materials with minor inclusions of Continental till.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Xb}{R}$, $\frac{Mv}{R}$	SiCL-kSiL	2-9	2-4	O.GL, BR.GL, GL.GL, GLBR.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Tall bilberry/Five-leaved bramble Black spruce-Lodgepole pine/Tall bilberry

Ecoregion: Subalpine

Ecological Conditions

This plateau provides a relatively homogeneous environment within which the prevalence of lodgepole pine forst is an expression of the regional climate.

2.2.5 Little Smoky Plain Subregion (Ecodistrict)

The subregion is found in the extreme southeastern portion of the study area and is dissected by the Little Smoky Plain River Valley (Figure 89). The plain consists of a series of rolling till covered slopes underlain by bedrock of the Paskapoo Formation. Numerous sinuous glacial meltwater channels are typical of this subregion and are accompanied by thin veneers of glaciofluvial materials over much of the landscape. Extensive peat deposits occur on depressional terrain and in meltwater channels.

The subregion falls within both the Boreal Uplands and the Subalpine ecoregions, with the latter occurring above 1 280 m. The vegetation pattern reflects both drainage conditions and materials.

Till deposits of Continental origin are the principal surficial material. Over much of the subregion the till is overlain by thin glaciofluvial sediments. Closed lodgepole pine forests have developed on the till. Where strongly acidic glaciofluvial materials overlie till deposits, black spruce is a major component of the overstory vegetation. Open black spruce muskeg and dwarf birch shrublands are found on peat deposits.

The Little Smoky Valley subregion is divided into four systems/ ecosections (Table 18). Detailed descriptions follows the table. Two fluvial systems were noted (F25, F28); their characteristics are discussed in Section 2.5 of Volume I of the report.

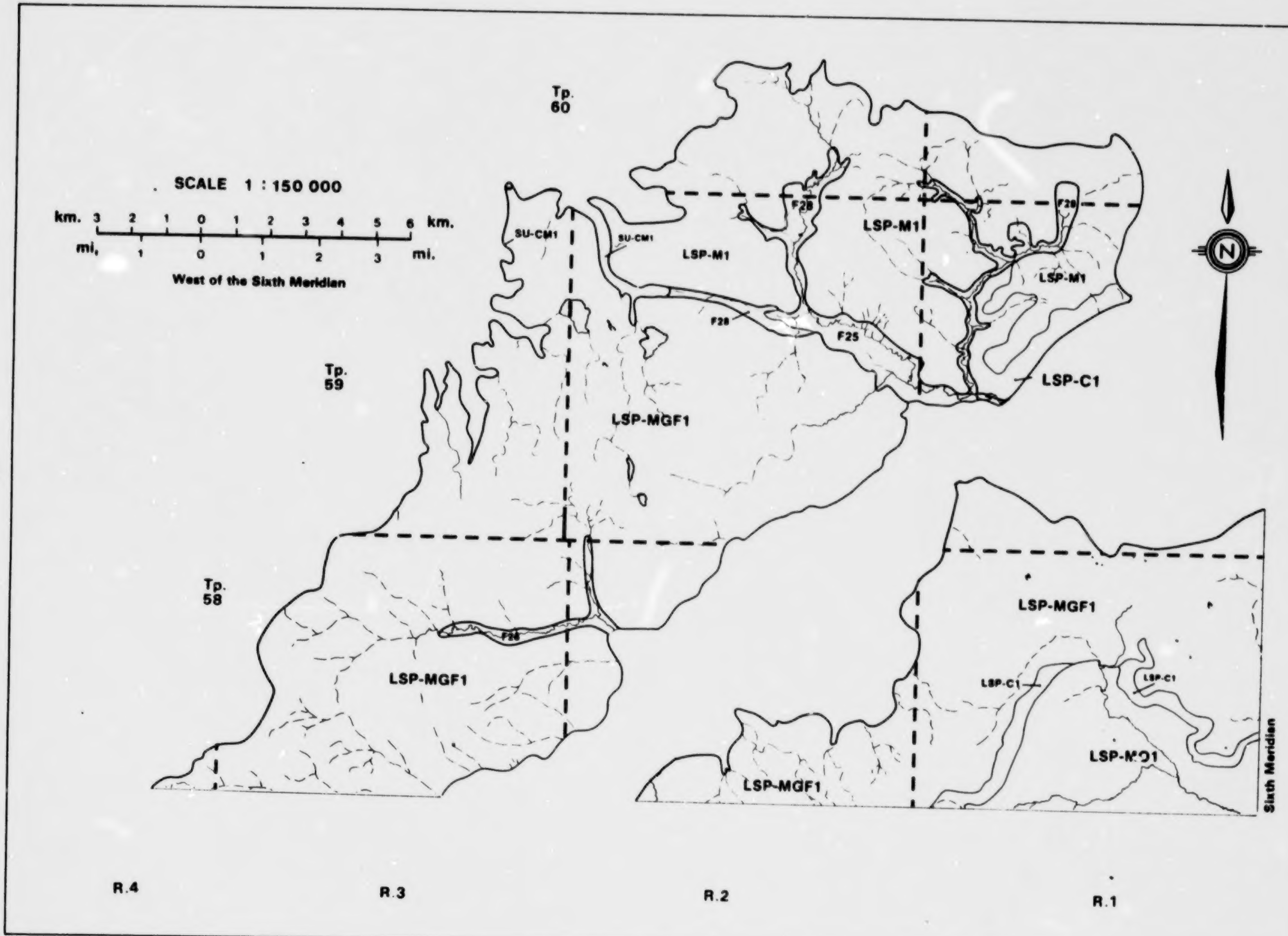

SCALE 1 : 150 000
km. 3 2 1 0 1 2 3 4 5 6 km.
mi, 1 0 1 2 3 mi.
West of the Sixth Meridian
Tp. 60
Tp. 59
Tp. 58
SU-CM1
SU-CM1
LSP-M1
LSP-M1
LSP-M1
F28
F28
F28
F25
F28
LSP-C1
LSP-MGF1
LSP-MGF1
LSP-MGF1
LSP-MGF1
LSP-C1
LSP-C1
LSP-MO1
Sixth Meridian
N
R.4
R.3
R.2
R.1

Figure 89: Little Smoky Plain Subregion (LSP)

Table 18

SUMMARY OF ECOSECTIONS IN THE LITTLE SMOKY PLAIN SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
LSP-C1	Steep, gullied slopes	Medium-textured colluvium	Lodgepole pine forest
LSP-M1	Rolling till plain	Medium to moderately fine-textured till and peat	Lodgepole pine and white spruce forest, muskeg
LSP-MGF1	Undulating ridge	Glaciofluvial sand over medium-textured till	Lodgepole pine and black spruce-pine forest, muskeg
LSP-MO1	Gently sloping basin	Medium-textured till and peat	Lodgepole pine and black spruce-pine forest, muskeg

LSP-C1

Physical Conditions

This system (Figure 90) occurs both north and south of the Little Smoky River and consists of inactive colluvial materials of variable thicknesses overlying strongly to very strongly sloping bedrock. Colluvium is derived from weathered bedrock and deposits of Continental till. Surface runoff has created several gullies across these slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	kSiL-SL	16-45	2-4	BR.GL, E.DYB, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Twisted stalk/ Feathermoss Lodgepole pine/Alder/Dewberry

Ecoregion: Boreal Uplands

Ecological Conditions

Groundwater seepage creates a favorable moisture regime on these slopes, even on steep southern exposures. Lodgepole pine forest is the dominant vegetation type, and alder is a common component of the understory. Forest cover acts to stabilize these slopes, even in the presence of seepage.

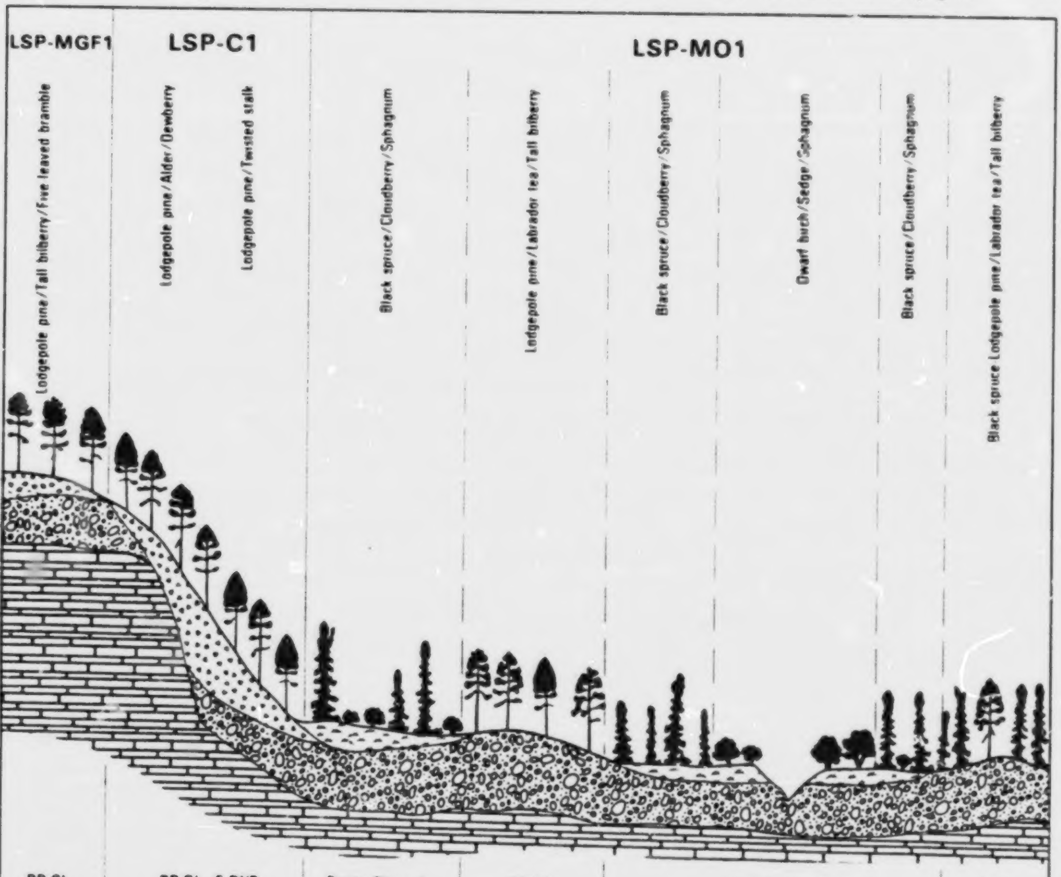

LSP-MGF1
LSP-C1
LSP-MO1
Lodgepole pine/Tall bilberry/Five leaved bramble
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Twisted stalk
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
Black spruce/Cloudberry/Sphagnum
Black spruce Lodgepole pine/Labrador tea/Tall bilberry
BR GL. E EB
BR GL. E DYB. GLBR GL
Peaty Gleysols, Mesisols
BR GL. E DYB
Peaty Gleysols, Mesisols
BR GL. GLBR GL

Figure 90: Schematic Diagram of Ecosections LSP-C1, LSP-MGF1 and LSP-MO1

LSP-M1

Physical Conditions

Located between the Deep Valley Plateau and the Little Smoky River, this system consists of gently to moderately rolling and ridged deposits of Continental till overlying bedrock (Figure 91). The system is strongly dissected by numerous tributary streams to the Little Smoky River which often occupy former glacial meltwater channels. Small organic accumulations of sphagnum peat develop locally within these channels. Surface runoff from the adjacent Deep Valley Plateau results in surface erosion and the deposition of thin fluvial veneers over till deposits.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	kSiL-SiCL	6-15	2-3	O.GL, BR.GL	Lodgepole pine/Labrador tea/Feathermoss Lodgepole pine/Labrador tea-Tall bilberry
			3-4	BR.GL, GLBR.GL	White spruce/Feathermoss
$\frac{Ovb}{M}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Common horsetail/Feathermoss Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands
Subalpine

Ecological Conditions

Most of the ecosection is covered with lodgepole pine forest, a reflection of the regional climate. Extensive stands of white spruce occur on steep slopes adjacent to the Deep Valley Plateau, where runoff is a significant ecological factor. Poorly-drained valley bottoms (including glacial meltwater channels) support open black spruce forest and dwarf birch shrublands, but most of these have been classified in separate ecosections (fluvial system F26).

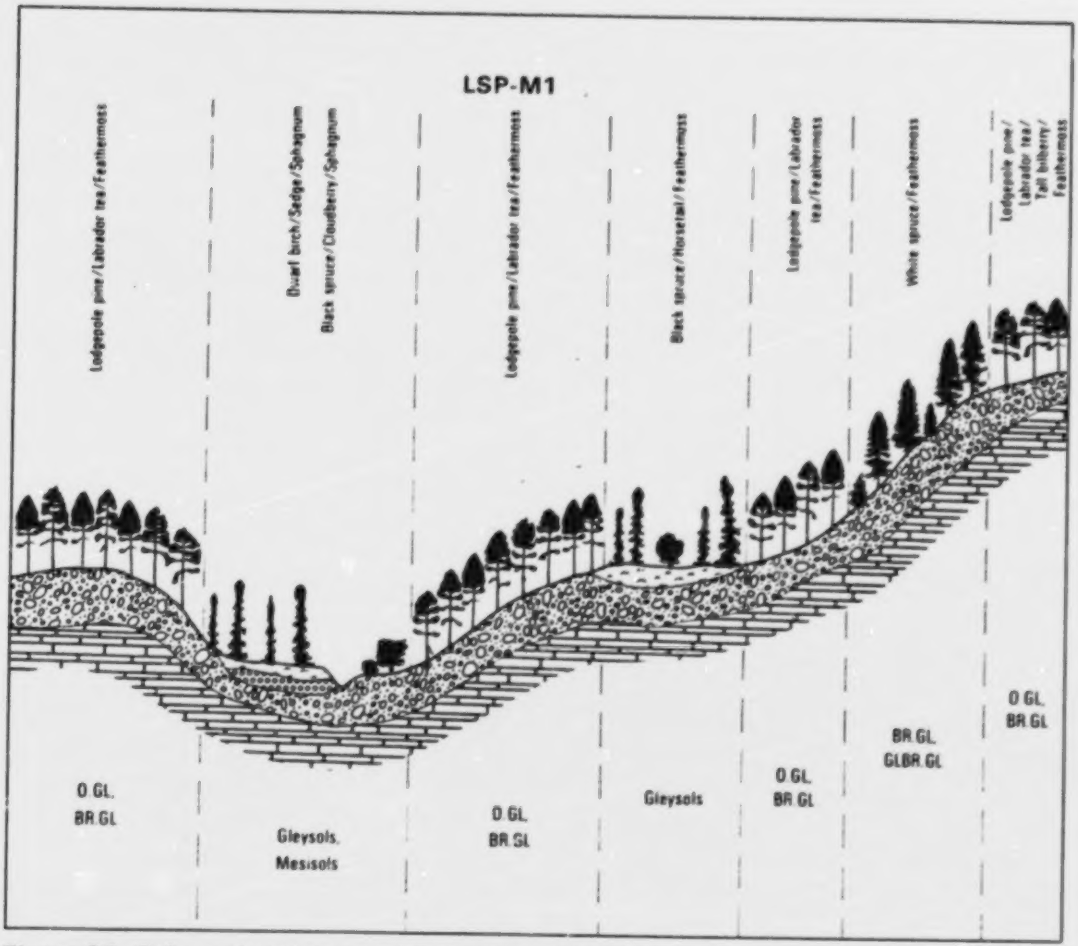

LSP-M1
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Horsetail/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Lodgepole pine/Labrador tea/Tall bilberry/Feathermoss
O.GL.
BR.GL
Gleysols,
Mesisols
O.GL.
BR.SL
Gleysols
O.GL.
BR.GL
BR.GL.
GLBR.GL
O.GL.
BR.GL

Figure 91: Schematic Diagram of Ecosection LSP-M1

LSP-MGF1

Physical Conditions

This subdued to strongly undulating upland area occurs adjacent to the Little Smoky River and consists of thick till deposits of Continental origin overlain by stony, coarse-textured glaciofluvial veneers (Figure 92). Numerous small glacial meltwater channels occur across the system and are generally oriented in a north-south direction. Thick glaciofluvial deposits occur along the bottoms of glacial meltwater channels and are associated with significant amounts of sphagnum peat. Several small kettle lakes occur west of the Little Smoky River.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M, $\frac{Mb}{R}$	SiL-SL	2-30	2-4	BR.GL, E.EB, GLBR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Lodgepole pine/White-flowered rhododendron/Feathermoss
$\frac{GFvb}{M}$	kSL	2-15	2-4	BR.GL, E.DYB, GLBR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Black spruce-Lodgepole pine/Tall bilberry
$\frac{Ovb}{M}$, $\frac{Ovb}{GF}$	$\frac{\text{Mesic}}{\text{SiL-kSL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

The composition of the upland forest is influenced by the pattern of deposition of surficial materials and by downslope movement of groundwater. Lodgepole pine forest is found on till deposits at high elevations. Seepage through sand overlays found at lower elevations creates rapid local variation in drainage, with open pine forest found on elevated sites and black spruce-pine forest on low-lying terrain. Peat deposits that have filled glacial meltwater channels support open black spruce forest and dwarf birch shrubland.

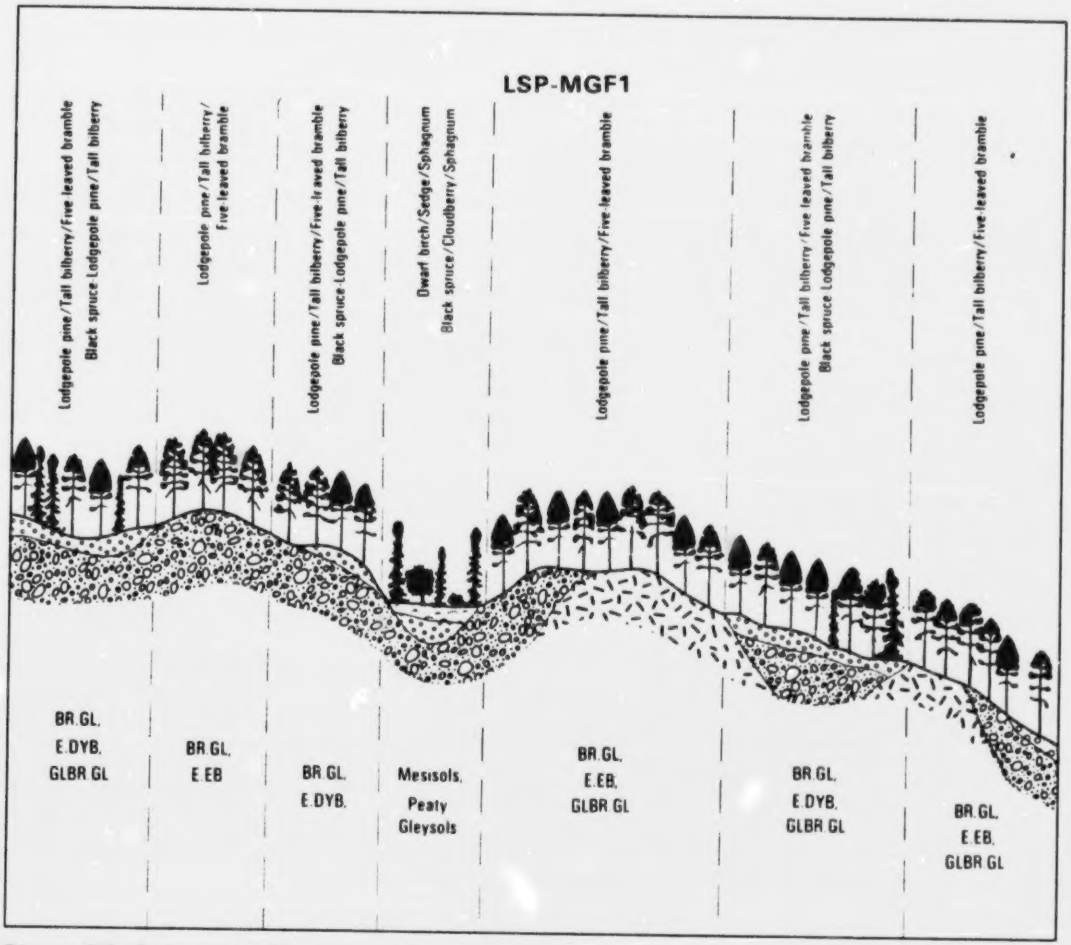

LSP-MGF1
Lodgepole pine/Tall bilberry/Five-leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/Tall bilberry/
Five-leaved bramble
Lodgepole pine/Tall bilberry/Five-leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/Tall bilberry/Five-leaved bramble
Black spruce Lodgepole pine/Tall bilberry
Lodgepole pine/Tall bilberry/Five-leaved bramble
BR.GL.
E.DYB.
GLBR.GL
BR.GL.
E.EB
BR.GL.
E.DYB.
Mesisols.
Peaty
Gleysols
BR.GL.
E.EB.
GLBR.GL
BR.GL.
E.DYB.
GLBR.GL
BR.GL.
E.EB.
GLBR.GL

Figure 92: Schematic Diagram of Ecosection LSP-MGF1

LSP-M01

Physical Conditions

Located in the extreme southeastern portion of the study area, this system consists of a complex of Continental till with extensive organic accumulations of sphagnum peat overlying nearly level to gently sloping bedrock (Figure 90). The system occupies a basin-like feature in the landscape in which groundwaters concentrate.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	kSiL-SL	2-9	3-4	BR.GL, E.DYB, GLBR.GL	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/Labrador tea/Tall bilberry
$\frac{\text{Ovb}}{\text{M}}$	$\frac{\text{Mesic}}{\text{kSiL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

An abundance of soil moisture is reflected in the predominance of black spruce-lodgepole pine forest on slightly elevated till deposits, with lodgepole pine forest confined to ridge crests. Groundwater movement is evident in the development of ribbed fens characterized by open black spruce muskeg and dwarf birch shrublands.

2.2.6 Little Smoky Valley Subregion (Ecodistrict)

Located in the southeastern portion of the study area (Figure 93), the valley is a well-defined glacial outwash channel currently occupied by the Little Smoky River. The subregion is characterized by numerous kames, eskers, oxbow lakes, meander scars and glacial meltwater channels. Elevations range from 1 295 m in the west to 1 175 m in the east, adjacent to the Little Smoky River, with local relief in the order of 30 m.

Bedrock of the Paskapoo Formation is masked by a complex of Continental till and glaciofluvial sediments. The glaciofluvial sediments are underlain by either glaciolacustrine or till materials and vary from a mixture of sand and gravels to sand and silts. Drainage varies depending upon thickness and nature of the underlying materials. Organic accumulations are extensive and are generally confined to glacial meltwater channels and depressional terrain.

The subregion occurs within the Boreal Uplands ecoregion, however, modal sites are rare. Closed black spruce/lodgepole pine forest is dominant with wetland areas supporting a mixture of dwarf birch and black spruce.

The Little Smoky Valley subregion is divided into three ecosection/systems (Table 19). One fluvial system was identified (F28) and is discussed in Section 2.5 of Volume I.

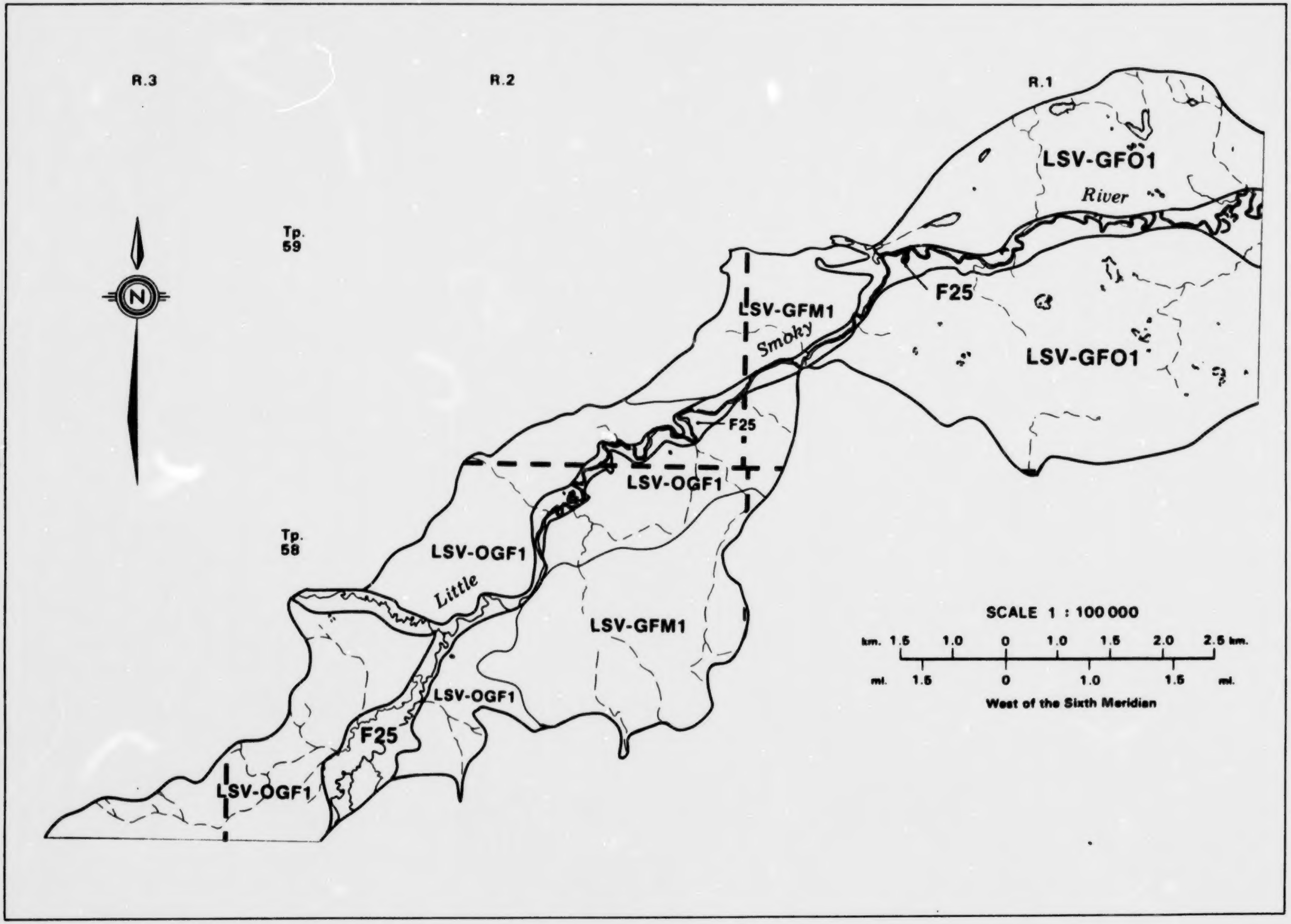

R.3
R.2
R.1
N
Tp. 59
Tp. 58
LSV-GFO1
River
LSV-GFO1
F25
LSV-GFM1
Smoky
F25
LSV-OGF1
LSV-OGF1
Little
LSV-GFM1
LSV-OGF1
F25
LSV-OGF1
SCALE 1 : 100 000
km. 1.5 1.0 0 1.0 1.5 2.0 2.5 km.
mi. 1.5 0 1.0 1.5 mi.
West of the Sixth Meridian

Figure 93: Little Smoky Valley Subregion (LSV)

Table 19

SUMMARY OF ECOSECTIONS IN THE LITTLE SMOKY VALLEY SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
LSV-GFM1	Rolling ridge and basin	Glaciofluvial sand over medium-textured till and peat	Lodgepole pine, black spruce-pine and black spruce forest, muskeg
LSV-GFO1	Rolling valley floor	Glaciofluvial sand and peat	Black spruce-Lodgepole pine and lodgepole pine forest, shrubby muskeg
LSV-OGF1	Nearly level valley floor	Peat and glaciofluvial sand	Black spruce and lodgepole pine forest, muskeg

LSV-GFM1

Physical Conditions

This system includes a low-lying ridge on the north side of the Little Smoky River, and a small basin on the south side (Figure 94). Surficial deposits consist of gently inclined to moderately rolling deposits of Continental till overlain by coarse-textured glaciofluvial materials of variable thickness. The thickness of glaciofluvial deposits decreases with increasing distance from the Little Smoky River. Peat deposits are more common on the south side of the Little Smoky River.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{GFvb}}{\text{M}}$	$\frac{\text{S}}{\text{SCL}}$	2-9	2-5	BR.GL, E.EB, GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Tall bilberry Lodgepole pine/Labrador tea/Tall bilberry
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

On the south side of the river, pronounced groundwater flow causes open black spruce forest and dwarf birch shrubland to predominate, with lodgepole pine forest restricted in extent. Lodgepole pine forest predominates on the better drained ridge on the north side of the river, with black spruce-pine forest in small drainage courses and black spruce forest and dwarf birch shrubland in peat-filled depressions.

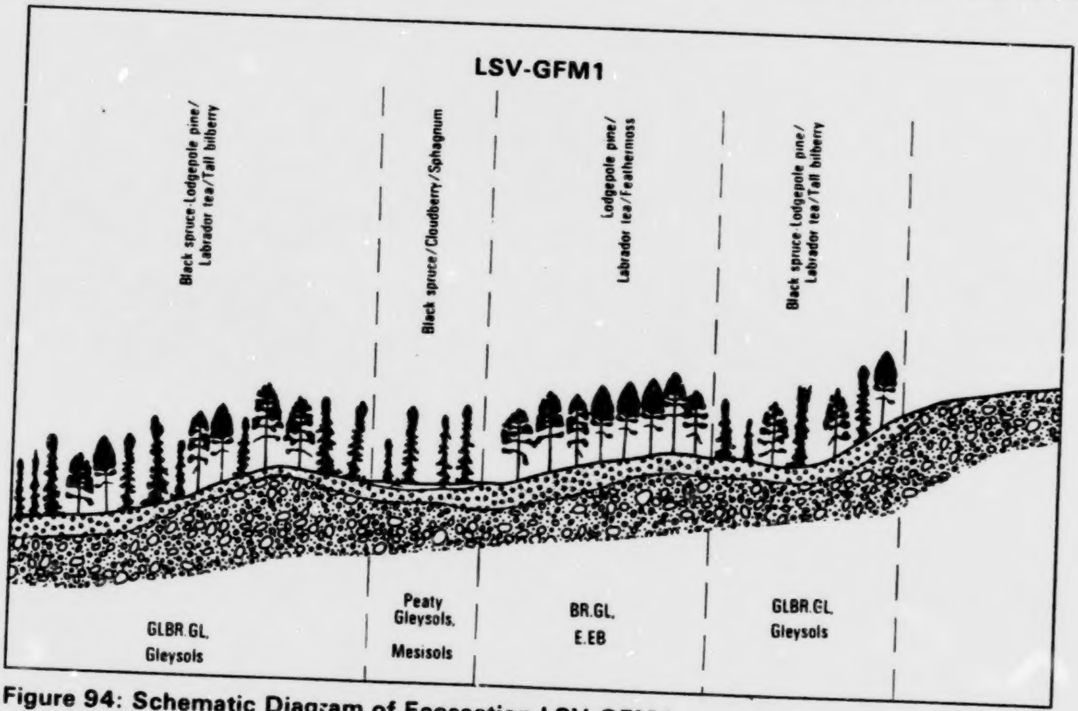

LSV-GFM1
Black spruce-Lodgepole pine/
Labrador tea/Tall bilberry
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/
Labrador tea/Feathermoss
Black spruce-Lodgepole pine/
Labrador tea/Tall bilberry
GLBR.GL,
Gleysols
Peaty
Gleysols,
Mesisols
BR.GL,
E.EB
GLBR.GL
Gleysols

Figure 94: Schematic Diagram of Ecosection LSV-GFM1

LSV-GFO1

Physical Conditions

This system occurs adjacent to the Little Smoky River and consists of a complex of glaciofluvial and organic materials (Figure 95). Coarse-textured glaciofluvial materials are of variable thickness, and are underlain at depth by moderately fine-textured till deposits of Continental origin. The depth of these materials decreases with distance from the Little Smoky River. Organic accumulations of sphagnum peat occur in glacial meltwater channels and account for approximately 30% of surficial materials. Numerous stagnant ice features such as kames and eskers are characteristic of this landscape.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GF, $\frac{GFv}{M}$	$\frac{S}{SCL}$	2-25	1-3	E.EB, BR.GL	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry Lodgepole pine/Labrador tea/ Feathermoss
$\frac{Ovb}{M}$	$\frac{Mesic}{SCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Extreme variation in soil moisture due to the combination of coarse-textured soils and pronounced groundwater movement produces a gradient of vegetation types, with open lodgepole pine forest on eskers, black spruce-lodgepole pine forest on level to gently sloping terrain, and dwarf birch shrubland in peat-filled glacial meltwater channels.

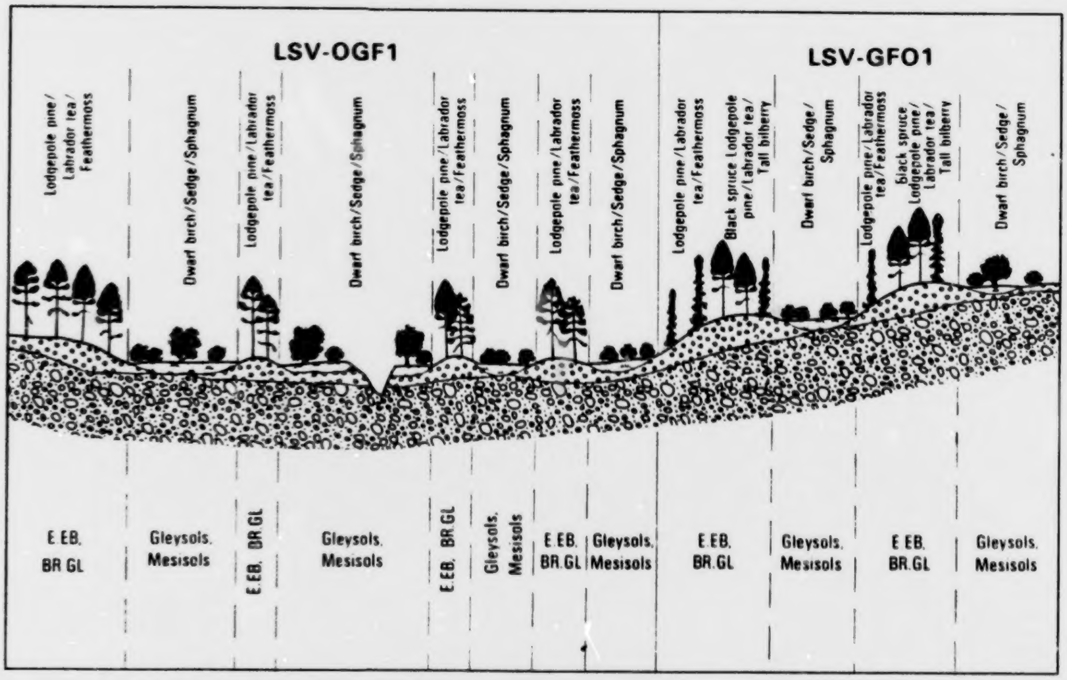

LSV-OGF1
LSV-GFO1
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Black spruce Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Black spruce Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
E.EB, BR.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols
E.EB, BR.GL
Gleysols, Mesisols

Figure 95: Schematic Diagram of Ecosections LSV-GFO1 and LSV-OGF1

LSV-OGF1

Physical Conditions

Found adjacent to the Little Smoky River, this system consists of a complex of thick organic accumulations and coarse-textured glaciofluvial materials (Figure 95). These materials are underlain at depth by moderately fine-textured glaciolacustrine sediments. Surface expression varies from level to hummocky.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
O, $\frac{\text{Ovb}}{\text{GL}}$	$\frac{\text{Mesic}}{\text{SCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum
GF, $\frac{\text{GFvb}}{\text{GL}}$	$\frac{\text{gS}}{\text{SCL}}$	2-9	2-3	E.EB, BR.GL	Lodgepole pine/Labrador tea/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

The vegetation pattern here is similar to that in the preceding ecosection. Prevailing moisture levels are somewhat higher, however, and the dominant types are black spruce forest and a mixture of dwarf birch shrublands and sedge meadows. Lodgepole pine forest occurs on drier, hummocky glaciofluvial deposits.

2.2.7 Narraway Benchlands Subregion (Ecodistrict)

This subregion, which is bissected by the Narraway River, is located in the western portion of the study area (Figure 96). The topography is gently inclined to rolling with local relief in the order of 150 m. The distinguishing characteristic of the subregion that the landscape has not been greatly altered by post-glacial erosion by secondary streams. The underlying bedrock consists of relatively undeformed strata of the Paskapoo Formation. The presence of the Scollard Member of this formation is responsible for the occurrence of seepage within the subregion. Generally, the bedrock is masked by fluted till of Cordilleran and Continental origin.

The vegetation pattern varies from dominance by lodgepole pine and black spruce at high elevations in the Boreal Uplands and Subalpine ecoregions to a mixture of aspen, lodgepole pine and white spruce at lower elevations in the Boreal Foothills.

The occurrence of end moraine, pitted ablation till, fluting and varied glaciofluvial deposits indicate that both Cordilleran and Continental ice sheets coalesced along the northern edge of the subregion. The tills, which are of variable thickness, support lodgepole pine forest. Where organic material has accumulated, black spruce forest and some areas of dwarf birch have developed.

Colluvium is found along most of the stream valley walls and have resulted from oversteepened topography and bedrock failures. Vegetation varies due to local drainage, seepage and aspect. White spruce, black

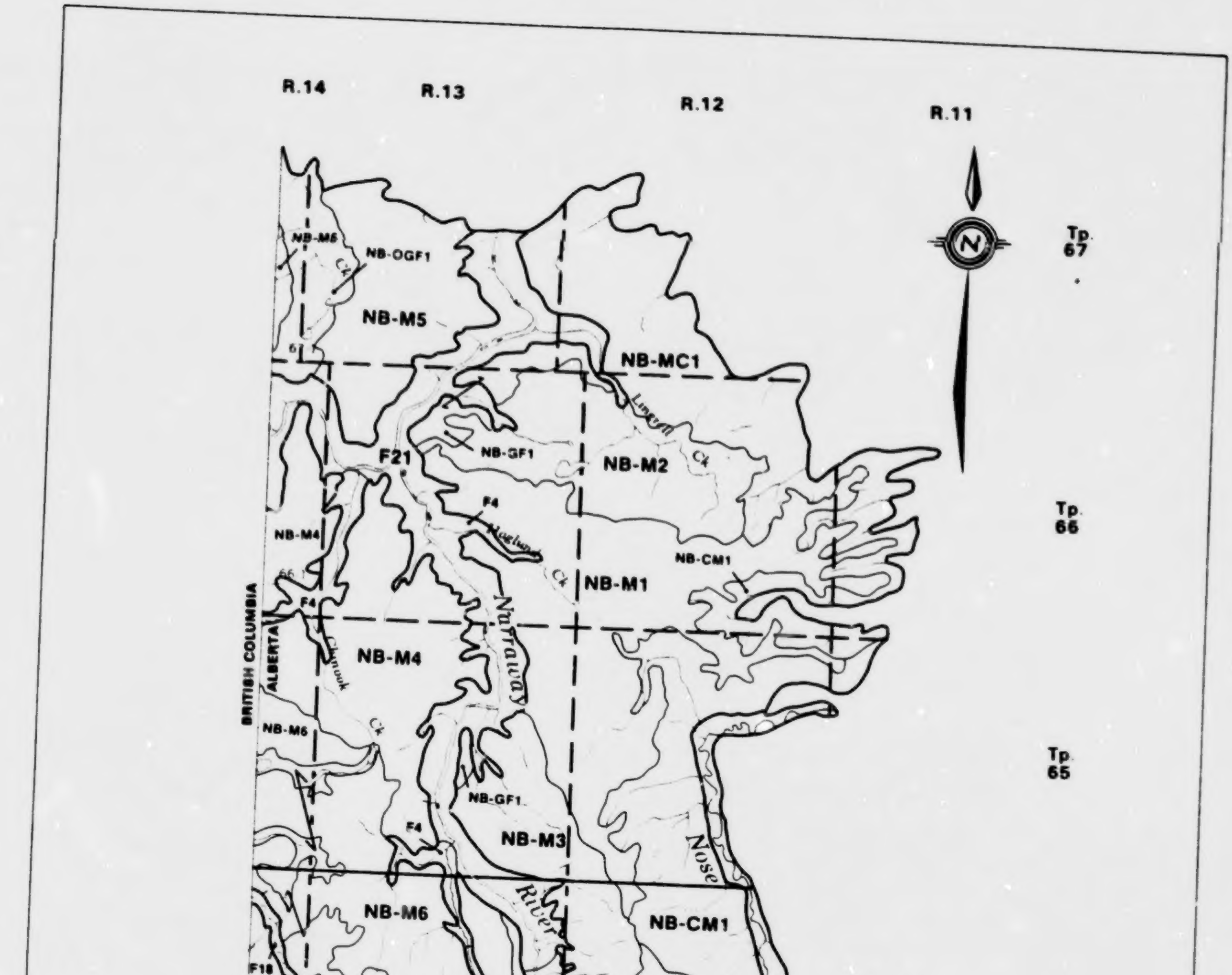

R.14
R.13
R.12
R.11
Tp. 67
Tp. 66
Tp. 65
Tp. 64
Tp. 63
Tp. 62
N
NB-M5
NB-OGF1
NB-M5
NB-MC1
Lingrell Ck
NB-GF1
NB-M2
F21
F4
Narraway
NB-M4
NB-CM1
NB-M1
BRITISH COLUMBIA
ALBERTA
F4
Chinook Ck
NB-M4
NB-M6
NB-GF1
F4
NB-M3
Nose
River
NB-M6
NB-CM1
F18
NB-MO1
F18
Creek
NB-MO1
NB-M6
NB-GF1
NB-M7
NB-C1
F15
F3
NB-M6
NB-M6
NB-GL1
NB-C1
F18
SCALE 1 : 250 000
km. 4 2 0 2 4 6 8 km.
mi. 2 0 2 4 mi.
West of the Sixth Meridian

Figure 96: Narraway Benchlands Subregion (NB)

spruce, and aspen are all to be found.

The Narraway Benchlands is divided into fourteen ecosections/systems (Table 20). Generalized descriptions which reflect the complex nature of the landscape follow the table. Each of these systems/ecosections have accompanyng schematic diagrams. Seven fluvial systems were identified within the subregion (F3, F4, F14, F15, F16, F18, F21). Their characteristics are discussed in Section 2.5 of Volume I of this report.

Table 20

SUMMARY OF ECOSECTIONS IN THE NARRAWAY BENCHLANDS

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
NB-C1	Steep valley walls	Medium-textured colluvium and thin till	Aspen and lodgepole pine forest
NB-CM1	Gentle to steep side slopes	Medium-textured colluvium and till	Lodgepole pine, aspen and white spruce forest
NB-GF1	Nearly level terraces	Glaciofluvial silt and sand	Lodgepole pine and black spruce-pine forest, muskeg
NB-GL1	Dissected terraces	Glaciolacustrine silt and clay, and peat	Lodgepole pine and black spruce-pine forest, muskeg
NB-M1	Plateau with end moraines	Moderately fine-textured till with sandy overlays	Lodgepole pine and black spruce-pine forest, muskeg
NB-M2	Pitted till plain	Medium-textured till and peat	Lodgepole pine and white spruce forest, muskeg
NB-M3	Fluted till plain	Moderately fine-moderately coarse-textured till	Lodgepole pine, black spruce-pine and white spruce forest
NB-M4	Gentle to steep side slopes	Moderately fine-coarse-textured till	Black spruce-lodgepole pine, white spruce and lodgepole pine forest
NB-M5	Inclined ridges	Moderately fine-textured till with sandy overlays	Lodgepole pine, aspen, white spruce and black spruce forest
NB-M6	Fluted till plain	Medium-moderately fine textured till and peat	Lodgepole pine and black spruce pine forest, muskeg
NB-M7	Gently valley sides	Medium-textured till with sandy overlays and peat	Lodgepole pine and black spruce-pine forest, muskeg
NB-MC1	Gentle to steep side slopes	Moderately fine-textured till and medium-textured colluvium	Aspen, lodgepole pine and white spruce forest
NB-MO1	Subdued valley	Moderately fine-coarse-textured till and peat	Lodgepole pine and black spruce-pine forest, shrubby muskeg
NB-OGF1	Gently undulating meltwater channel	Peat and pited glaciofluvial sand	Muskeg, black spruce-lodgepole pine forest

NB-C1

Physical Conditions

These strongly to steeply sloping valley walls (Figure 97) are located adjacent to Gunderson and Nose Creeks. Surficial materials are dominantly active and inactive colluvium derived from residual sandstones. Thin morainal veneers of Continental origin are common on gentler slopes and low angle slumps occur on gentle slopes between Nose and Gunderson Creeks.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	rSL-L	31-70	1-2	O.R	Lodgepole pine/Hairy wild rye Aspen/Buffaloberry/Showy Aster
$\frac{\text{M/Cv}}{\text{R}}$	SiL-SL	16-45	2-3	O.DYB, BR.GL	Lodgepole pine/Alder/Dewberry

Ecoregion: Boreal Uplands

Ecological Conditions

Aspect has an important influence on the vegetation. Lodgepole pine forest predominates on these slopes, with stands on southern exposures having a relatively open canopy and a sparse, grassy understory. Aspen stands are found on the steepest southern exposures. White spruce stands occur in seepage tracks on all exposures.

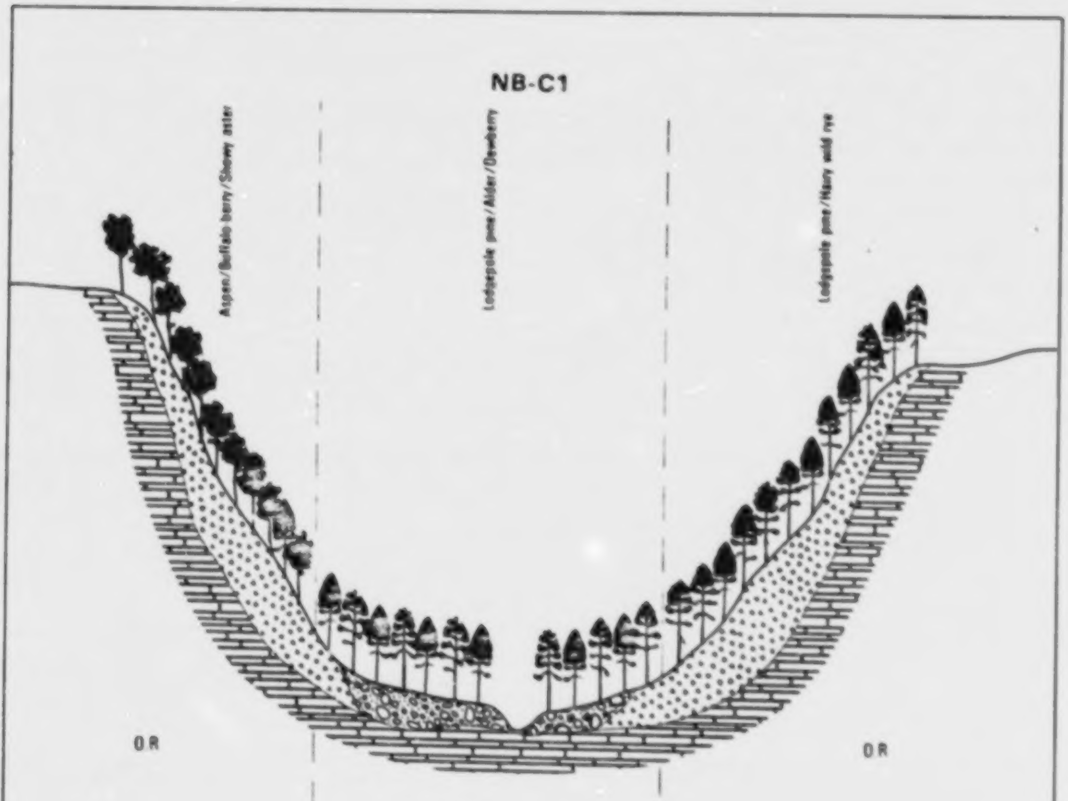

NB-C1
Aspen/Buffalo berry/Showy aster
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Hairy wild rye
O.R
O.DYB.
BR.GL
O.R

Figure 97: Schematic Diagram of Ecosection NB-C1

NB-CM1

Physical Conditions

This system includes the gently to very strongly sloping side slopes of the Narraway Benchlands (Figure 98). It is bounded on the east by Nose Creek and on the west by a gently inclined morainal benchland (NB-M1). Colluvium derived from Cordilleran tills and weathered sandstone materials are the principal surficial materials within the area. Ground moraine is common on lower slope positions where tills are generally overlain by thin fluvial veneers derived from slope wash.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	rSiL	25-45	2	O.R, O.EB	Aspen/Buffaloberry/Showy aster Lodgepole pine/Hairy wild rye
$\frac{\text{Cvb}}{\text{M}}$, $\frac{\text{Mvb}}{\text{R}}$	$\frac{\text{SiL}}{\text{rSiCL}}$	6-15	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/Alder/Dewberry Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{SiL}}{\text{rSiCL}}$	16-45	3-4	BR.GL, GLBR.GL	White spruce/Low-bush cranbery/ Dewbery White spruce/Feathermoss

Ecoregions: Boreal Uplands
Boreal Foothills

Ecological Conditions

Fire has had a considerable influence on the vegetation pattern in this ecosection. The upland forest is a mixture of aspen and lodgepole pine communities, with white spruce stands in seepage tracks. Much of the landscape is currently covered with seral shrublands dominated by willow and alder, however.

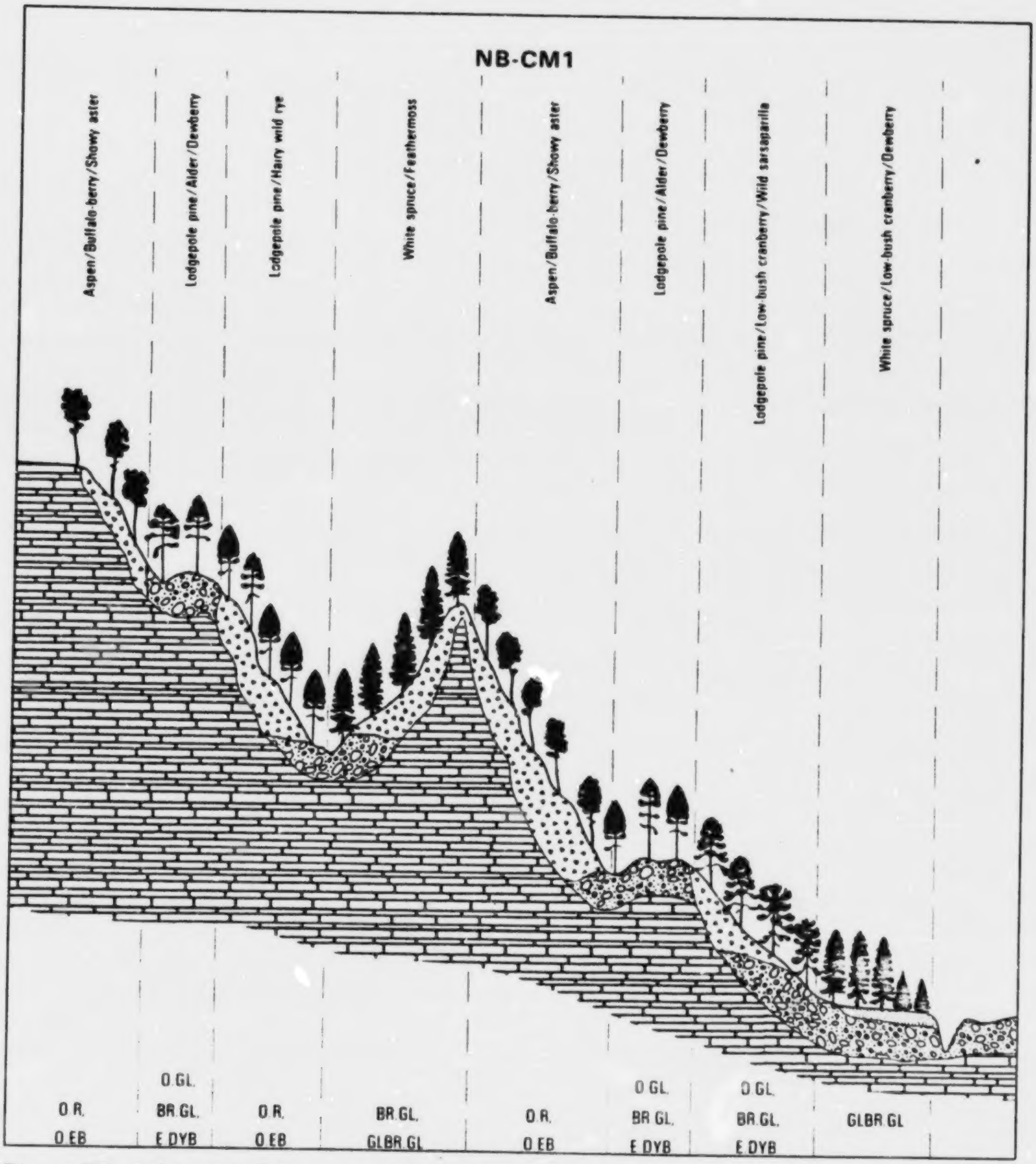

NB-CM1
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Hairy wild rye
White spruce/Feathermoss
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
O.R.
O.EB
O.GL.
BR.GL.
E.DYB
O.R.
O.EB
BR.GL.
GLBR.GL
O.R.
O.EB
O.GL.
BR.GL.
E.DYB
O.GL.
BR.GL.
E.DYB
GLBR.GL

Figure 98: Schematic Diagram of Ecosection NB-CM1

NB-GF1

Physical Conditions

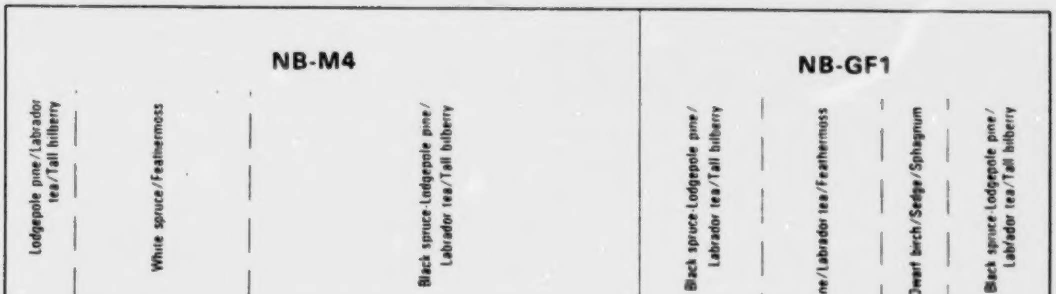
This system consists of a series of level to gently inclined medium to coarse-textured glaciofluvial terraces bordering the Narraway River (Figure 99). The entire system is underlain by the morainal deposits. Discharge of groundwater from adjacent uplands causes imperfect to poor drainage conditions.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{GFb}}{\text{M}}$	$\frac{\text{S-Si}}{\text{SiCL}}$	2-15	2-3	BR.GL, E.DYB	Lodgepole pine/Labrador tea/ Feathermoss
$\frac{\text{GFv}}{\text{GL}}, \frac{\text{GFv}}{\text{M}}$	$\frac{\text{Si}}{\text{CL}}, \frac{\text{Si}}{\text{SiCL}}$	0-2	4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Mesisols, Gleysols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

High soil moisture levels resulting from groundwater input and the low permeability of underlying till causes black spruce-lodgepole pine forest to predominate on these terraces, despite the relatively coarse-textured surficial materials. Drier conditions on silty ridges and along terrace edges support lodgepole pine forest. Open black spruce forest and dwarf birch shrublands are of limited extent.



NB-M4
NB-GF1
Lodgepole pine/Labrador tea/Tall bilberry
White spruce/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Feathermoss
Dwarf birch/Sedge/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
BR GL, E DYB
GLBR GL, GLE DYB, Gleysols
BR GL, E DYB, GLBR GL, GLE DYB, Gleysols
GLBR GL, Gleysols
BR GL, E DYB
Mesisols, Gleysols
GLBR GL, Gleysols

Figure 99: Schematic Diagram of Ecosections NB-GF1 and NB-M4

Physical Conditions

This dissected glaciolacustrine terrace is located immediately east of the Narraway River (Figure 100) and consists of moderately fine to fine textured sediments. Fluvial and organic veneers are common at the base of adjacent slopes (NB-M7). Surface expression is terraced to gently inclined. Moderately well drained conditions prevail over most of the landscape, except adjacent to slopes, where drainage is poor to imperfect because of groundwater discharge.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GL	CL	0-2	2-3	O.GL	Lodgepole pine/Labrador tea/ Feathermoss
$\frac{Fv}{GL}$	$\frac{S}{CL}$	0-2	3-4	O.GL, E.DYB, GL.GL	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
$\frac{Ov}{GL}$	$\frac{Mesic}{CL}$	0-02	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Young seral lodgepole pine forest predominates on most of this terrace because gullying has improved drainage of these fine-textured materials. Black spruce-pine forest occurs on the southern part of the terrace where drainage is impeded, and shrubby black spruce muskeg is found at the base of slopes where groundwater is discharged.

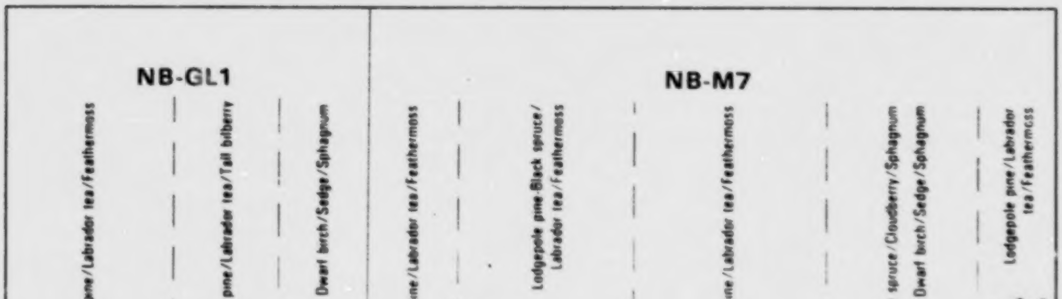

NB-GL1
NB-M7
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine-Black spruce/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
O GL
O GL. E DYB. GL GL
Peaty Gleysols. Mesisols
BR GL
Peaty Gleysols. Mesisols
BR GL
Gleysols. Mesisols
BR GL

Figure 100: Schematic Diagram of Ecosections NB-GL1 and NB-M7

NB-M1

Physical Conditions

Located east of the Narraway River (Figure 101), this gently inclined morainal plateau is characterized by a series of distinct end moraines of Cordilleran origin which indicates that ice retreated to the south-southwest. Till deposits are generally thin throughout the system and conform to the topography of the underlying bedrock. Ridged to undulating coarse-textured glaciofluvial materials overlie till deposits in the northern portion of this ecosection adjacent to NB-M2.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SiL-SiCL	2-9	2-5	BR.GL, GLBR.GL, Gleysols	Lodgepole pine/Alder/Labrador tea Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry White spruce/Feathermoss
$\frac{\text{GFv}}{\text{M}}$	$\frac{\text{S}}{\text{SiCL}}$	2-9	2-4	BR.GL, GLBR.GL	Lodgepole pine/Alder/Labrador tea Lodgepole pine/Labrador-Tall bilberry
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

The predominant vegetation on this undulating terrain consists of lodgepole pine forest on elevated, well-drained ridges with thin surficial materials and black spruce-lodgepole in swales where materials are thicker and more soil moisture is available. Depressional groundwater discharge areas have a mixture of black spruce forest and open, shrubby black spruce muskeg. Extensive stands of white spruce are found on lower, north-facing slopes adjacent to NB-M2.

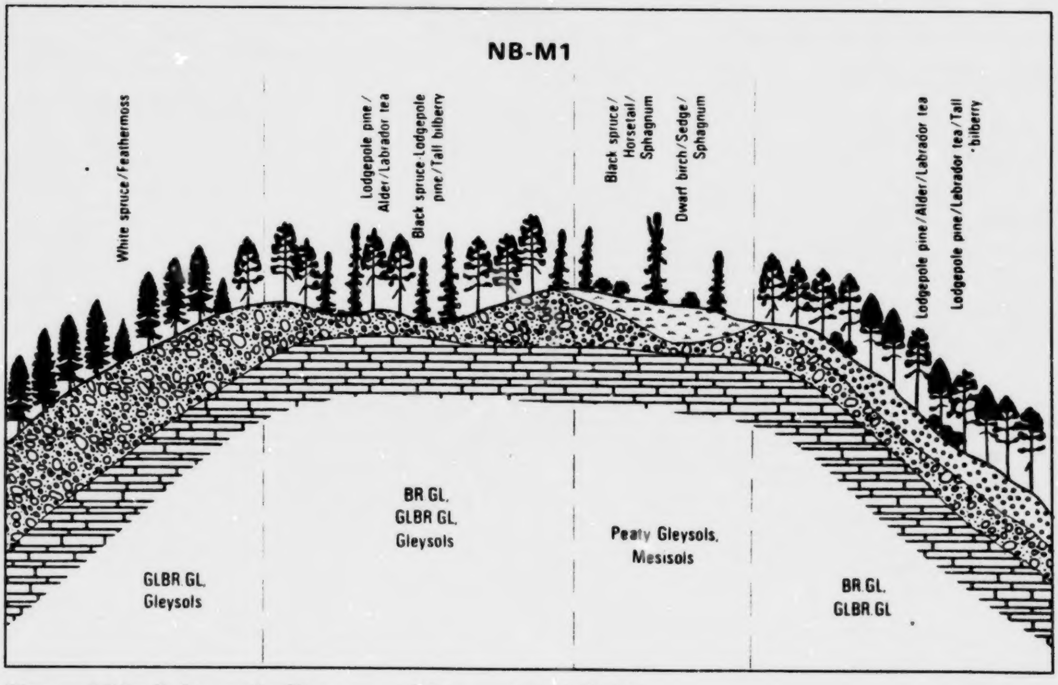

NB-M1
White spruce/Feathermoss
Lodgepole pine/Alder/Labrador tea
Black spruce-Lodgepole pine/Tall bilberry
Black spruce/Horsetail/Sphagnum
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/Labrador tea/Tall bilberry
GLBR GL
Gleysols
BR GL
GLBR GL
Gleysols
Peaty Gleysols,
Mesisols
BR GL
GLBR GL

Figure 101: Schematic Diagram of Ecosection NB-M1

NB-M2

Physical Conditions

This basin-like hummocky till plain is centered around Lingrell Lake and consists of pitted moraine of both Cordilleran and Continental origin (Figure 102). Thin organic accumulations are scattered throughout the area especially in the upper reaches of Lingrell Creek. Local relief varies from 10-25 m and slopes range from gentle to moderate. The till fabric suggests that Cordilleran and Continental ice sheets coalesced in this area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M	rSiL-rSiCL	2-15	2-3	BR.GL, E.DYB	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
			3-4	BR.GL, GLBR.GL	White spruce/Low-bush cranberry/Dewberry
		2-5	4-5	GLBR.GL, Gleysols	White spruce/Common horsetail
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Feathermoss Larch-Black spruce/Dwarf birch/Sphagnum

Ecoregion: Boreal Foothills

Ecological Conditions

Lodgepole pine forest is characteristic of well-drained hummocks. The vegetation in hollows depends on depth of the water table and varies from white spruce stands to black spruce forest and dwarf birch muskeg as depth of the water table decreases. Extensive peat deposits around the headwaters of Lingrell and an unnamed creek support open black spruce and black spruce-larch muskeg.

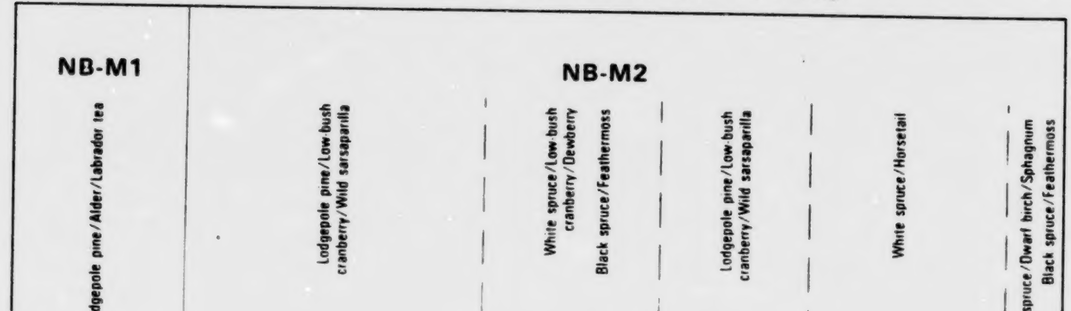

NB-M1
NB-M2
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Black spruce/Feathermoss
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Horsetail
Tamarack-Black spruce/Dwarf birch/Sphagnum
Black spruce/Feathermoss
BR GL
GLBR GL
BR GL
E DYB
GLBR GL
Gleysols
BR GL
E DYB
GLBR GL
Gleysols
Gleysols, Mesisols

Figure 102: Schematic Diagram of Ecosections NB-M2 and NB-M1

NB-M3

Physical Conditions

This system abuts the east side of the Narraway River (Figure 103). Surface expression varies from gently inclined to moderately rolling and ridged, with slopes ranging from nearly level to moderate.

The dominant surficial materials are very stony Cordilleran tills of variable thickness overlying bedrock. Fluting marks suggest that ice moved across the area from south-southwest. Where tills are very thin or absent residual sandstone materials are commonly exposed. Fluvial veneers derived from slope wash are common on lower slope positions.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/R	rSiCL-SL	2-15	2-3	BR.GL, E.EB	Lodgepole pine/Labrador tea/Feathermoss
Fv/M	SL/rSiCL	2-9	4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Labrador tea-Tall bilberry
					White spruce/Feathermoss Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

A large fraction of this ecosection has been burnt and currently supports seral shrubland and lodgepole pine stands. The composition of unburned forest follows a moisture gradient, with lodgepole pine on well-drained knolls, white spruce in seepage tracks and black spruce in groundwater discharge areas on valley bottoms. Most sites are expected to regenerate to lodgepole pine forest.

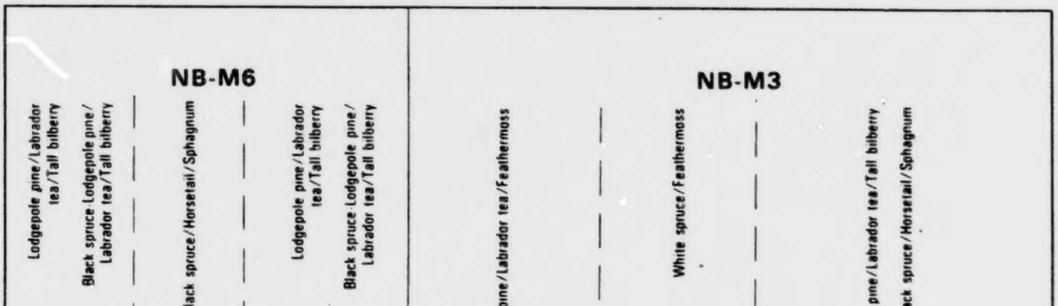

NB-M6
Lodgepole pine/Labrador tea/Tall bilberry
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Horsetail/Sphagnum
Lodgepole pine/Labrador tea/Tall bilberry
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
NB-M3
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Black spruce/Horsetail/Sphagnum
BR.GL, GLBR.GL
Peaty Gleysols, Mesisols
BR.GL, GLBR.GL
BR.GL, E.EB
GLBR.GL, Gleysols
GLBR.GL, Gleysols

Figure 103: Schematic Diagram of Ecosections NB-M3 and NB-M6

NB-M4

Physical Conditions

This area on the north side of the Chinook Ridge consists of very gently to strongly sloping ground moraine comprised of very stony Cordilleran tills (Figure 99). Colluvial veneers are common on the upper slopes of Chinook Ridge while fluvial veneers derived from slope wash overlie till deposits on lower slopes.

Groundwater discharge is pronounced because of northerly dipping bedrock which is close to the surface. Seepage tracks are common on slopes and imperfectly to poorly drained conditions predominate in groundwater discharge areas at the base of slopes. Adjacent to the Narraway and Wapiti River, soils are generally well drained.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Fv}{R}$	$\frac{LS}{rSiCL}$	2-9	3-5	BR.GL, E.DYB, GLE.DYB, Gleysols	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry White spruce/Feathermoss
$\frac{Mvb}{R}$, $\frac{Cvb}{R}$	rSiCL	2-30	2-3	BR.GL, E.DYB	Lodgepole pine/Labrador tea-Tall bilberry

Ecoregion: Boreal Uplands

Ecological Conditions

Pure lodgepole pine forest is confined to well-drained knolls because of the prevalence of groundwater movement in this ecosection. White spruce forest is found on northern exposures and seepage tracks, while black spruce-pine forest occurs on lower slopes where groundwater is discharged. Deciduous shrubland occurs in recently burned areas and on peat deposits in depressional terrain.

NB-M5

Physical Conditions

This gently to moderately inclined, northwest trending bedrock ridge (Figure 104) occurs immediately north and west of the confluence of the Wapiti and Narraway Rivers and is dissected by a former glacial meltwater channel which is currently occupied by Hiding Creek. These bedrock ridges are overlain by moderately stony, pitted Cordilleran tills which in turn are overlain by a combination of thin glaciofluvial veneers and small eskers. The orientatoin of eskers suggests that Curdilleran ice moved across this area toward the northeast.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{GFv}}{\text{M}}$	$\frac{\text{LS}}{\text{SiCL}}$	2-9	3	O.GL, BR.GL	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla White spruce/Low-bush cranberry/ Dewberry
		2-5	4-5	GLBR.GL, Gleysols	Black spruce/Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

The vegetation reflects topographically controlled variation in soil drainage. Lodgepole pine forest occurs on well-drained knolls and ridges, while gentle side slopes have a mixture of pine and aspen forest with white spruce stands in seepage tracks. Valley bottoms have a mixture of black spruce forest and shrubland.

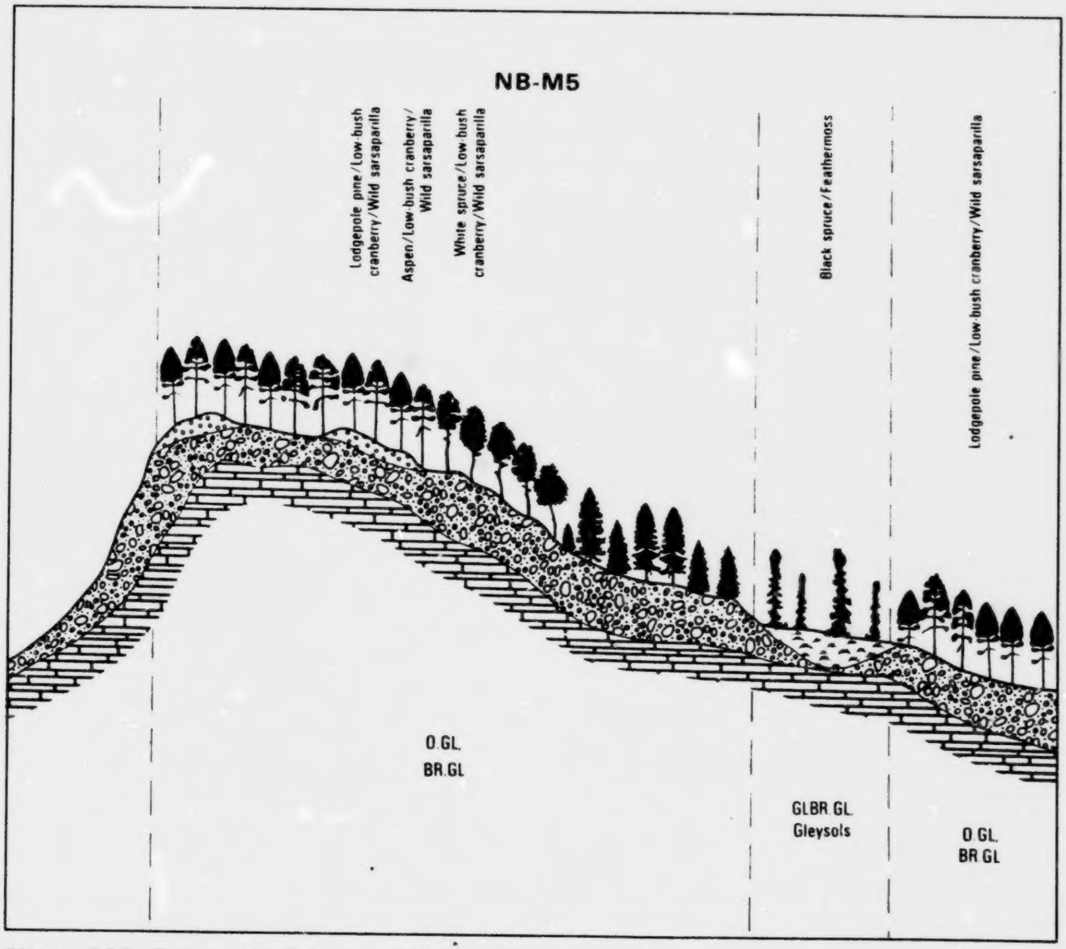

NB-M5
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Wild sarsaparilla
Black spruce/Feathermoss
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
O GL
BR GL
GLBR GL
Gleysols
O GL
BR GL

Figure 104: Schematic Diagram of Ecosection NB-M5

NB-M6

Ecological Conditions

This gently undulating to moderately rolling fluted till plain occurs on both sides of the Narraway River and consists of medium to moderately fine-textured Cordilleran tills of variable thicknesses (Figure 103). Small areas of hummocky moraine occur east of the Narraway River. Fluting marks are generally oriented in a north-south direction and suggest that several ice advances and retreats may have occurred across this area. Thin accumulations of sphagnum peat occur in depressional terrain and account for less than 20% of the total area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/R	gL-rSiCL	2-15	2-3	BR.GL, PZ.GL	Lodgepole pine/Labrador tea-Tall bilberry
			3-4	GLBR.GL	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
Ov/M	Mesic/SiCL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Lodgepole pine forest covers about half of the ecosection on well-drained uplands, while extensive, imperfectly to poorly drained valley bottoms support black spruce-pine forest and large areas of open black spruce forest and deciduous shrubland.

NB-M7

Physical Conditions

Located east of the Narraway River, this system consists of medium-textured ground moraine and ablation till (Figure 100). Seepage is pronounced because of the presence of the Scollard Member in the bedrock, and imperfect to poorly drained conditions prevail with better drained conditions occurring locally on ridges. Thin fluvial veneers derived from slope wash overlie tills, especially on lower slope positions. Thin accumulations of sphagnum peat occur locally but account for less than 20% of all surficial materials.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mb}{R}$, $\frac{Fv}{M}$	L, $\frac{SL}{L}$	2-15	3-4	BR.GL, GLBR.GL	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
			2-3	BR.GL	Lodgepole pine/Labrador tea-Tall bilberry
$\frac{Ov}{M}$	$\frac{Mesic}{L}$	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

An abundance of groundwater discharge causes black spruce-lodgepole pine forest to predominate in this ecosection, with open black spruce stands and deciduous shrubland found at the base of slopes where ponding occurs. Lodgepole pine forest occurs adjacent to the Narraway River where gullying has improved soil drainage.

NB-MC1

Physical Conditions

This system includes the gently to very strongly sloping side slopes of the Narraway Benchlands (Figure 105). It encompasses the headwater valleys of Sandbar Creek and several unnamed tributary valleys to Nose Creek. Ground moraine of Cordilleran and Continental origin is the principal surficial material across the ecosection, however, inactive colluvium is commonly associated with very strongly sloping southerly aspects along Sandbar Creek. Fluvial veneers derived from slope wash are common on lower slope positions.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/R	rSiCL	6-30	2-3	O.GL, BR.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla
Mvb/R, Fv/M	SiL/rSiCL	6-15	3-4	BR.GL GLBR.GL	White spruce/Low-bush cranberry/Dewberry
Cvb/R	rSiL	16-30	2	O.R, O.EB	Aspen/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

Aspect has a significant influence on the vegetation in this ecosection. Neutral exposures and relatively gentle slopes support a mixture of lodgepole pine and aspen forest, with lodgepole pine predominating. Aspen forest is more common on steep southern exposures, while white spruce forest occurs on steep northern exposures and on lower north exposures where groundwater is discharged.

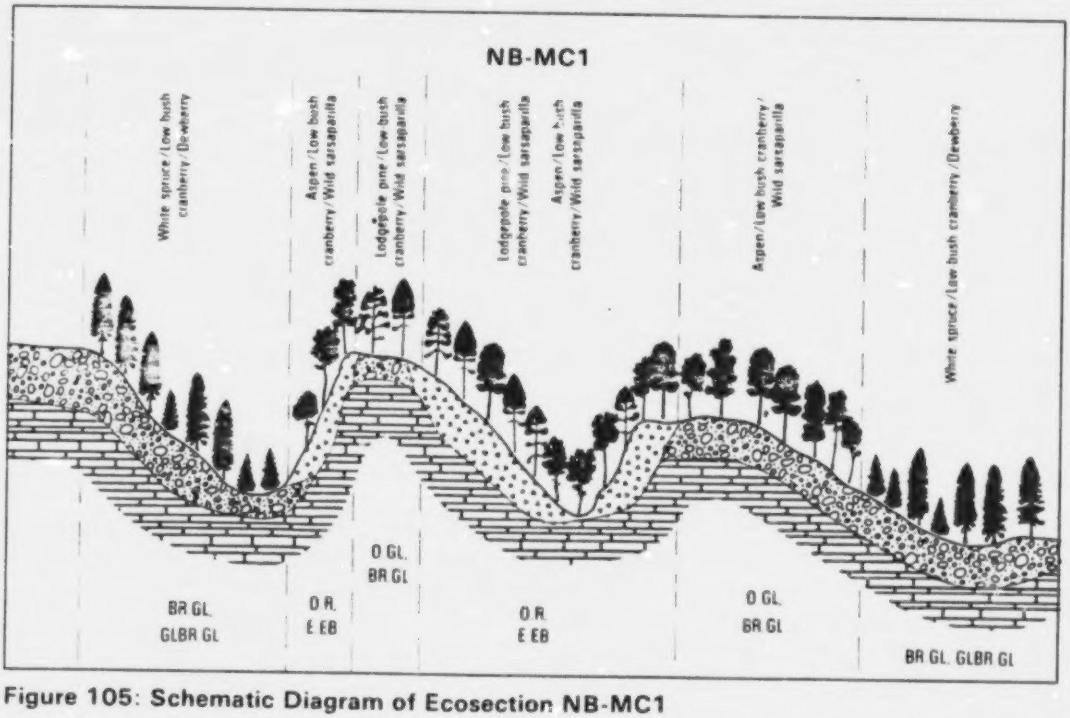

NB-MC1
White spruce/Low bush cranberry/Dewberry
Aspen/Low bush cranberry/Wild sarsaparilla
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Aspen/Low bush cranberry/Wild sarsaparilla
Aspen/Low bush cranberry/Wild sarsaparilla
White spruce/Low bush cranberry/Dewberry
BR GL
GLBR GL
O R
E EB
O GL
BR GL
O R
E EB
O GL
BR GL
BR GL GLBR GL

Figure 105: Schematic Diagram of Ecosection NB-MC1

NB-MO1

Physical Conditions

This system (Figure 106) is a subdued valley occupied by Compass and Mistanusk Creeks, Sherman Lake and several smaller unnamed lakes. Subdued discontinuous bedrock ridges covered with fluted ground moraine of Cordilleran origin occur throughout this ecosection. Accumulations of sphagnum peat account for approximately 40% of all surficial materials and occur in low-lying, poorly-drained areas between ridges.

MATERIALS	TEXTURE	SLOPES	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Ovb}}{\text{M}}$	$\frac{\text{Mesic}}{\text{gL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum Black spruce/Horsetail/Sphagnum
$\frac{\text{Mvb}}{\text{R}}$	gL-gCL	2-15	3-4	BR.GL, GLBR.GL	Black spruce-Lodgepole pine/ Labrador tea-Tall bilberry
			2-3	BR.GL	Lodgepole pine/Labrador tea/ Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

Excessive soil moisture causes open black spruce muskeg and dwarf birch shrubland to cover much of this landscape. The upland forest varies from black spruce-lodgepole pine to lodgepole pine as drainage improves.

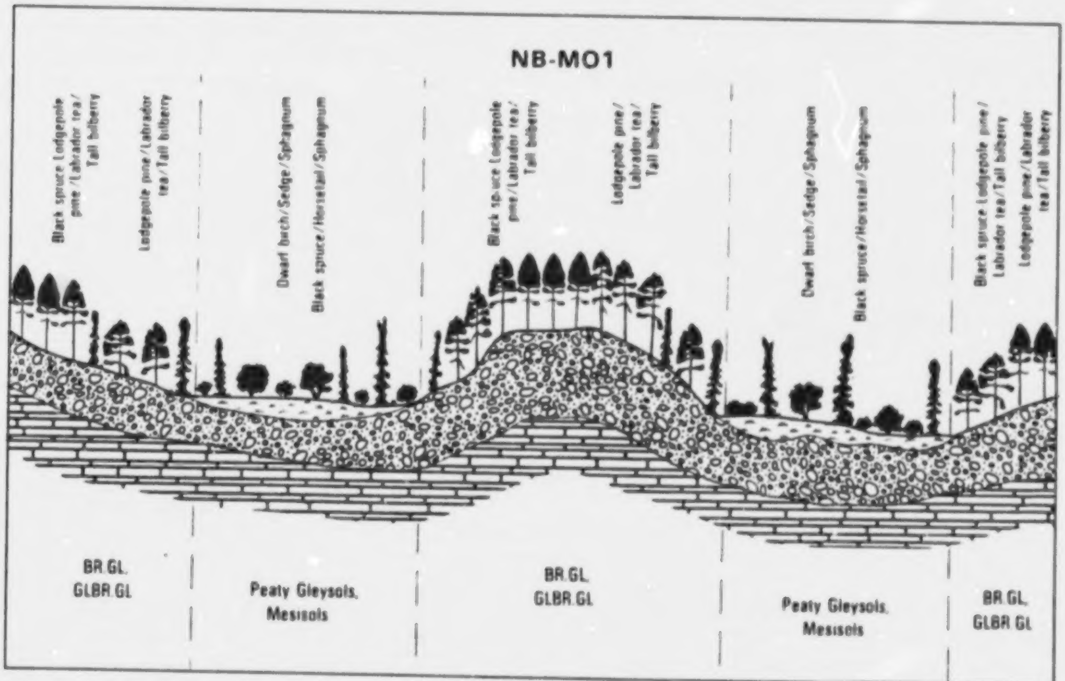

NB-MO1
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Black spruce/Horsetail/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Black spruce/Horsetail/Sphagnum
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Tall bilberry
BR.GL. GLBR.GL
Peaty Gleysols, Mesisols
BR.GL. GLBR.GL
Peaty Gleysols, Mesisols
BR.GL. GLBR.GL

Figure 106: Schematic Diagram of Ecosection NB-MO1

NB-OGF1

Physical Conditions

This system is a level to gently undulating glacial meltwater channel drained by Hiding Creek (Figure 107). Thick accumulations of sedge and sphagnum peat account for approximately 60% of all surficial materials and numerous ponds and floating bogs occur throughout the area. Pitted glaciofluvial outwash materials occur throughout the area. The entire system is underlain at depth by a combination of moderately fine to fine-textured slowly permeable Cordilleran tills and glaciolacustrine sediments.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
O	Mesic	0	6	Mesisols	Tamarack-Black spruce/Dwarf birch/ Sphagnum
Ovb/GL, Ovb/M	Mesic/SiCL/CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Feathermoss
GF, GFv/M/GL	S	0-2	2-4	E.EB, BR.GL	Lodgepole pine-Black spruce/ Labrador tea/Feathermoss

Ecoregion: Boreal Foothills

Ecological Conditions

High water tables cause a mixture of dwarf birch shrubland, sedge meadows and open black spruce muskeg to cover the majority of this landscape. Better drained gravel ridges support lodgepole pine and pine-black spruce forest.

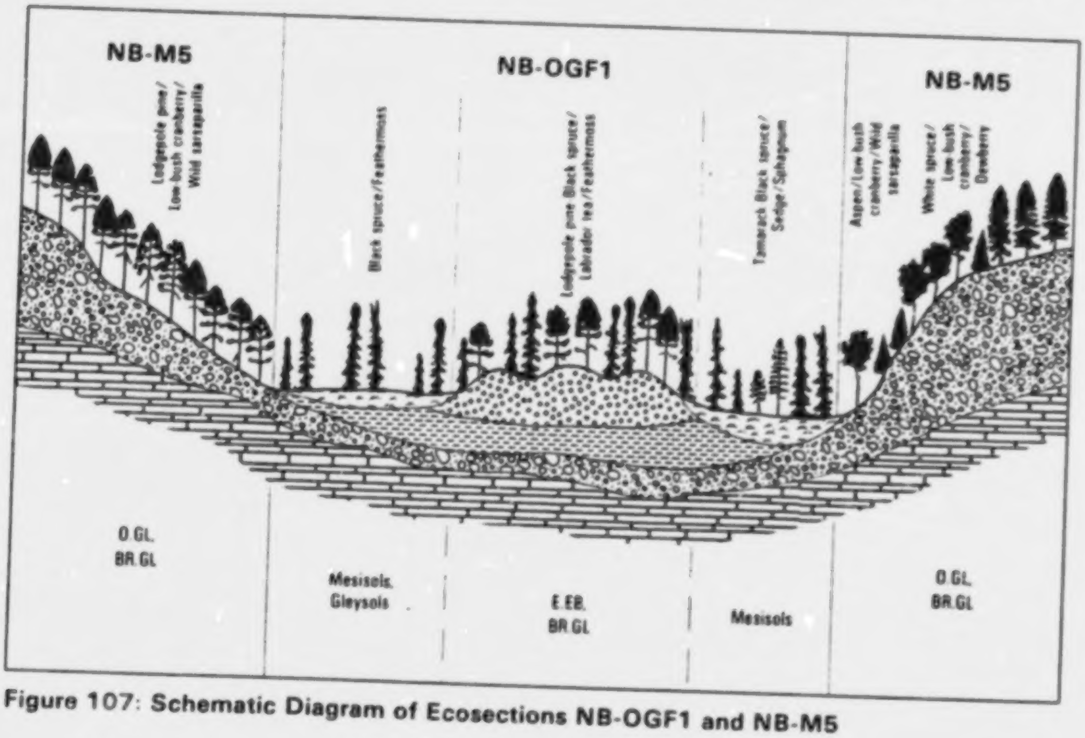

NB-M5
NB-OGF1
NB-M5
Lodgepole pine/ Low-bush cranberry/ Wild sarsaparilla
Black spruce/Feathermoss
Lodgepole pine Black spruce/ Labrador tea/Feathermoss
Tamarack Black spruce/ Sedge/Sphagnum
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/ Low-bush cranberry/ Dewberry
O.GL
BR.GL
Mesisols, Gleysols
E.EB, BR.GL
Mesisols
O.GL
BR.GL

Figure 107: Schematic Diagram of Ecosections NB-OGF1 and NB-M5

2.2.8 Simonette Benchlands Subregion (Ecodistrict)

The Simonette Benchlands consists of a rolling uplands occurring east of the Latornell River (Figure 108). This upland area, which represented part of the shoreline of the former Glacial Lake Peace, has been extensively dissected by the Moose River and tributaries of the Latornell River. The subregoin is underlain mainly by gently dipping sandstone of the Paskapoo Formation. However, along the northern fringes of the uplands strata of the Wapiti Formation are often found. The subregon lies entirely with aspen forest being dominant.

Surficial materials consist chiefly of a complex of hummocky till and gently undulating ground moraine of Continental origin. Often these deposits are overlain by thin eolian materials. Vegetation consists of aspen, white spruce and lodgepole pine in association with varied wetland vegetation. Where eolian materials are found, lodgepole pine forest is predominant with aspen being of lesser significance.

The Simonette Benchlands subregion is divided into three systems/ecosections (Table 21). In addition, one fluvial system was identified (F22) and is discussed in Section 2.5 of Volume I.

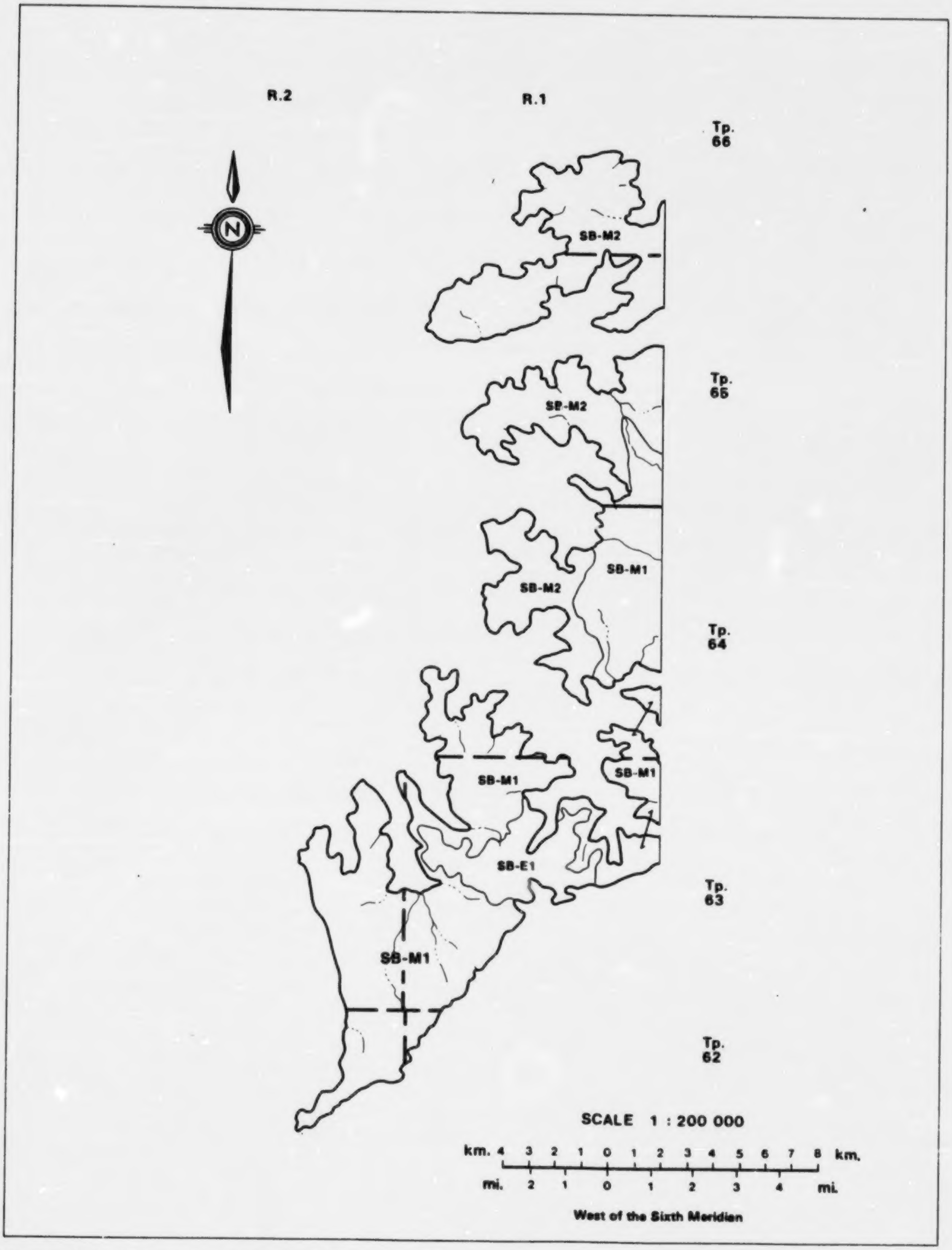

R.2
R.1
N
Tp. 66
SB-M2
Tp. 65
SB-M2
SB-M1
SB-M2
Tp. 64
SB-M1
SB-M1
SB-E1
Tp. 63
SB-M1
Tp. 62
SCALE 1 : 200 000
km. 4 3 2 1 0 1 2 3 4 5 6 7 8 km.
mi. 2 1 0 1 2 3 4 mi.
West of the Sixth Meridian

Figure 108: Simonette Benchlands Subregion (SB)

Table 21

SUMMARY OF ECOSECTIONS IN THE SIMONETTE BENCHLANDS SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
SB-E1	Undulating plateau	Eolian silt over moderately fine-textured till	Lodgepole pine and aspen forest, shrublands and muskeg
SB-M1	Rolling, hummocky upland	Eolian sand over moderately fine-textured till	Lodgepole pine and white spruce forest
SB-M2	Rolling, dissected upland	Moderately fine-textured till	Aspen and white spruce forest, deciduous shrubland

Physical Conditions:

This system occurs immediately north of the Simonette River and consists of thick undulating blankets of eolian silts with numerous subdued dune-like features (Figure 109). These deposits are underlain at depth by a combination of moderately fine to fine-textured till deposits of Continental origin and glaciolacustrine sediments. Several deep organic accumulations have developed in poorly drained depressional terrain.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
E, Eb/M	Si/SiC	5-15	2-3	E.EB, BR.GL	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla
Ev/GL, Ev/M	Si/SiC	5-15	3-4	BR.GL, GLSZ.GL	Aspen/Low-bush cranberry/Wild sarsaparilla
Ovb/GL/M	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Tamarack-Black spruce/Dwarf birch/Sphagnum

Ecoregion: Boreal Foothills

Ecological Conditions

Variation in the depth of loess deposits and in availability of soil moisture determines the vegetation pattern. Lodgepole pine forest occurs on deep, well-drained silt deposits, while aspen forest is found on thinner deposits where underlying till holds water close to the surface. The vegetation in low-lying areas ranges from a mixture of willow, paper birch and reedgrass in subdued depressions to dwarf birch shrublands with scattered black spruce in larger areas where organic soils have developed.

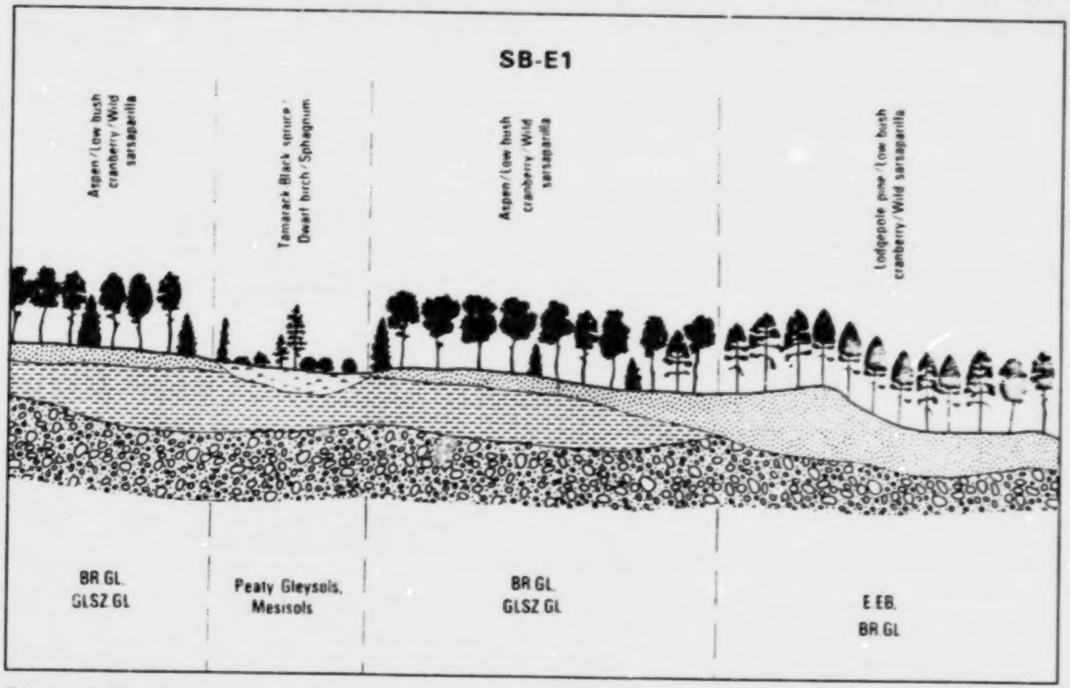

SB-E1
Aspen/Low bush cranberry/Wild sarsaparilla
Tamarack Black spruce/Dwarf birch/Sphagnum
Aspen/Low bush cranberry/Wild sarsaparilla
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
BR GL
GLSZ GL
Peaty Gleysols,
Mesisols
BR GL
GLSZ GL
E EB
BR GL

Figure 109: Schematic Diagram of Ecosection SB-E1

Physical Conditions:

This is a rolling upland area of hummocky moraine on the eastern edge of the study area (Figure 110). Moderately fine-textured till deposits of Continental origin are overlain by veneers of aeolian sands. This creates a pattern of drainage conditions that vary from well on hummocks to imperfect in hollows.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Ev}}{\text{M}}$	$\frac{\text{S-LS}}{\text{SiCL}}$	2-15	2-4	BR.GL	Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla White spruce/Low-bush cranberry/ Dewberry

Ecoregion: Boreal Foothills

Ecological Conditions

The vegetation pattern is produced by differences in the thickness of eolian deposits and availability of soil moisture, along with relatively recent fires. Eolian deposits are thin and fires have not occurred recently in the western portion of the ecosection. The predominant vegetation is white spruce forest with a significant component of balsam poplar. Large portions of this forest were harvested in the past, and remaining stands are overmature.

Eolian deposits are thicker, the terrain is more hummocky and fires have been wide-spread in the eastern part of the ecosection. Young seral pine forest occurs on hummocks, while hollows support dense shrubland of willow and reedgrass in which young white spruce have established.

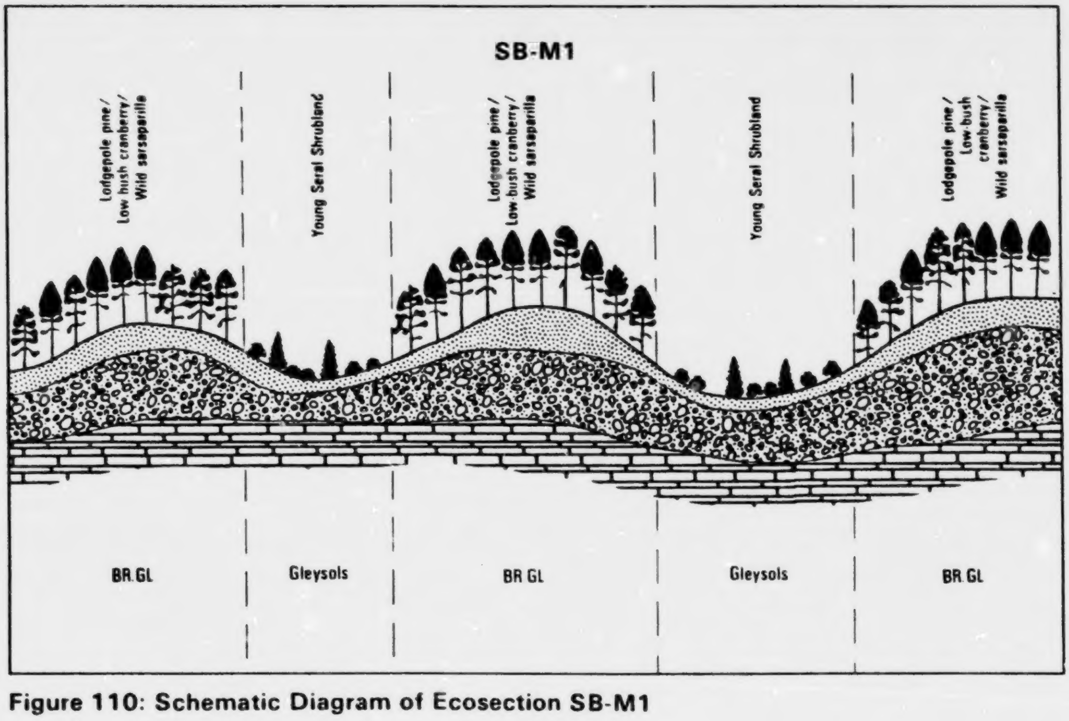

SB-M1
Lodgepole pine/ Low-bush cranberry/ Wild sarsaparilla
Young Seral Shrubland
Lodgepole pine/ Low-bush cranberry/ Wild sarsaparilla
Young Seral Shrubland
Lodgepole pine/ Low-bush cranberry/ Wild sarsaparilla
BR.GL
Gleysols
BR GL
Gleysols
BR GL

Figure 110: Schematic Diagram of Ecosection SB-M1

SB-M2

Physical Conditions

This is an undulating to rolling dissected upland area covered with Continental till (Figure 111). Moderately stony, moderately fine-textured Continental till is often overlain by sandy glaciofluvial veneers on lower slope positions.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M	SiCL	2-15	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Wild sarsaparilla
			4	GL.GL	White spruce/Low-bush cranberry/Dewberry
GFv/M	SL/SiCL	2-9	3-4	BR.GL, GLBR.GL	White spruce/Low-bush cranberry/Dewberry Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

The vegetation pattern is topographically controlled. Aspen forest occurs on relatively well-drained uplands with willow-paper birch shrubland in low-lying ares. White spruce stands are common on slopes, especially gentle northern exposures receiving seepage water. A few stands of lodgepole pine forest occur on sandy deposits on lower slopes, but the relative lack of lodgepole pine distinguishes this from other ecosections in the subregion.

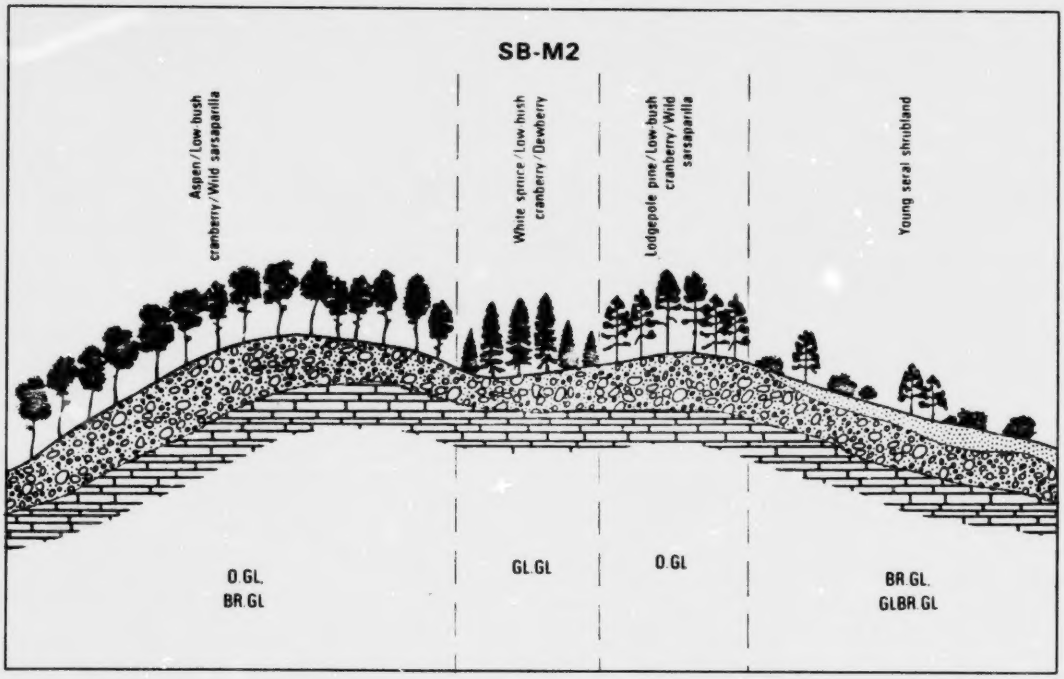

SB-M2
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
Young seral shrubland
O.GL, BR.GL
GL.GL
O.GL
BR.GL, GLBR.GL

Figure 111: Schematic Diagram of Ecosection SB-M2

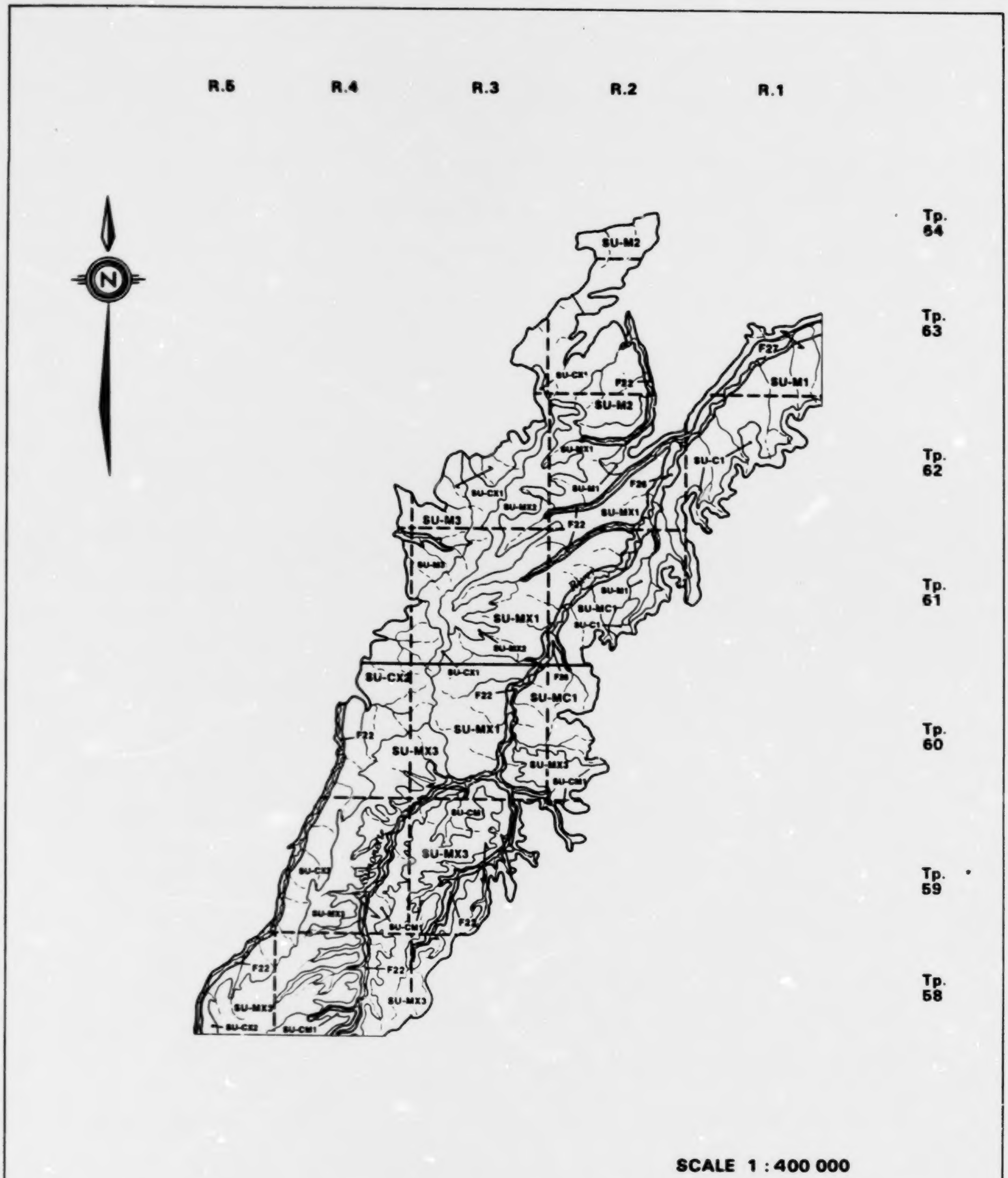
2.2.9 Simonette Uplands Subregion (Ecodistrict)

The Simonette Uplands occurs east of the Smoky River valley (Figure 112) . The subregion consists of a series of rolling to flat-topped plateau remnants that have been extensively dissected by the tributaries of both the Simonette and Latornell Rivers.

The subregion is underlain by bedrock of the Paskapoo Formation, with minor occurrences of pre-glacial gravels (Tertiary) being found overlying bedrock on the remnant plateau tops. The principal surficial materials consist of a complex of Continentl tills and residuum, with till thickness decreasing from north to south. Colluvium derived from weathered bedrock, pre-glacial gravels and till deposits is common throughout the subregion.

This subregion extends from the Boreal Foothills ecoregion in the north to the Subalpine ecoregion along the southern fringes of the plateau remnants. The Boreal Foothills are typified by a mixture of aspen, lodgepole pine and white spruce forest. Closed lodgepole pine forests, typical of the Boreal Uplands and Subalpine ecoregions, occur at higher elevations, the latter occurring above 1 280 m. Within the Subalpine, significant amounts of black spruce can be found on wet sites.

The Simonette Uplands has been divided into eleven systems/ ecosections (Table 22). These are described in generalized terms with accompanying schematic diagrams. Three fluvial systems are identified (F22, F26, F27) within the subregion and are discussed in Section 2.5 of Volume I.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R.4
R.3
R.2
R.1
Tp. 64
Tp. 63
Tp. 62
Tp. 61
Tp. 60
Tp. 59
Tp. 58
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SU-M1
SU-C1
SU-M3
SU-MX1
SU-MX2
SU-MX3
SU-CX1
SU-CX2
SU-MC1
SU-CM1
F22
F26
F27
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 112: Simonette Uplands Subregion (SU)

Table 22

SUMMARY OF ECOSECTIONS IN THE SIMONETTE UPLANDS SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
SU-C1	Steep, gullied valley walls	Coarse-textured colluvium	Lodgepole pine, aspen and white spruce forest
SU-CM1	Gentle to steep headwater valleys	Moderately fine-textured colluvium and till	Lodgepole pine and white spruce forest
SU-CX1	Extreme, gullied and slumped slopes	Thin medium-textured colluvium and residual sandstone	Aspen, white spruce and lodgepole pine forest
SU-CX2	Steep, ridged and gullied slopes	Medium-textured colluvium, residual materials and till	Lodgepole pine and white spruce forest
SU-M1	Gentle to steep slopes and plateau remnants	Medium-textured till	Aspen, white spruce and lodgepole pine forest
SU-M2	Gentle to steep headwater valleys	Medium to moderately fine-textured till	Aspen, white spruce and lodgepole pine forests
SU-M3	Highly dissected gentle to steep slopes	Moderately fine-textured till	White spruce, aspen and lodgepole pine forest
SU-MC1	Steeply sloping walls of headwater valleys	Medium-textured till and colluvium	Lodgepole pine and white spruce forest
SU-MX1	Dissected, gentle to steep headwater valleys	Thin medium-textured till and residual sandstone	Lodgepole pine and white spruce forest
SU-MX2	Undulating plateau remnants	Thin, medium-textured till and residual sandstone	Lodgepole pine forest
SU-MX3	Rolling plateau remnants	Medium-textured till and weathered residual sandstone	Lodgepole pine and black spruce-pine forest

SU-C1

Physical Conditions:

Located east of the Simonette River adjacent to the Deep Valley Plateau, this system consists of gullied side slopes with relatively thin colluvial materials overlying moderate to very strongly inclined bedrock (Figure 113). These materials are very stony and are comprised of a mixture of Continental tills, preglacial gravels and unconsolidated bedrock materials. Colluvial materials tend to be somewhat thicker on lower slope positions where groundwater seepage is common. Pronounced groundwater discharge from the adjacent Deep Valley plateau combined with the steepness of the topography has resulted in gullying and slumping along lower slopes, generally in areas where vegetation cover has been removed.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cv}{R}$	gSL	31-45	2-3	O.R., O.EB, BR.GL	Lodgepole pine/Alder/Dewberry Lodgepole pine/Twisted stalk/ Feathermoss Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla
$\frac{Cb}{R}$	gSL	16-30	2-4	E.EB, BR.GL, GLCU.R	Lodgepole pine/Alder/Labrador tea Lodgepole pine/Low-bush cranberry/ Wild sarsaparilla White spruce/Feathermoss Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Uplands
Boreal Foothills

Ecological Conditions

Aspect and fire have significant influences on the vegetation pattern in this ecosection. A mixture of white spruce and lodgepole pine forest occurs on northern exposures in the northern part of the ecosection, where seepage is also a factor. Western exposures are steeper and drier, and fires have occurred as well. These slopes support a mixture of aspen and lodgepole pine forest.

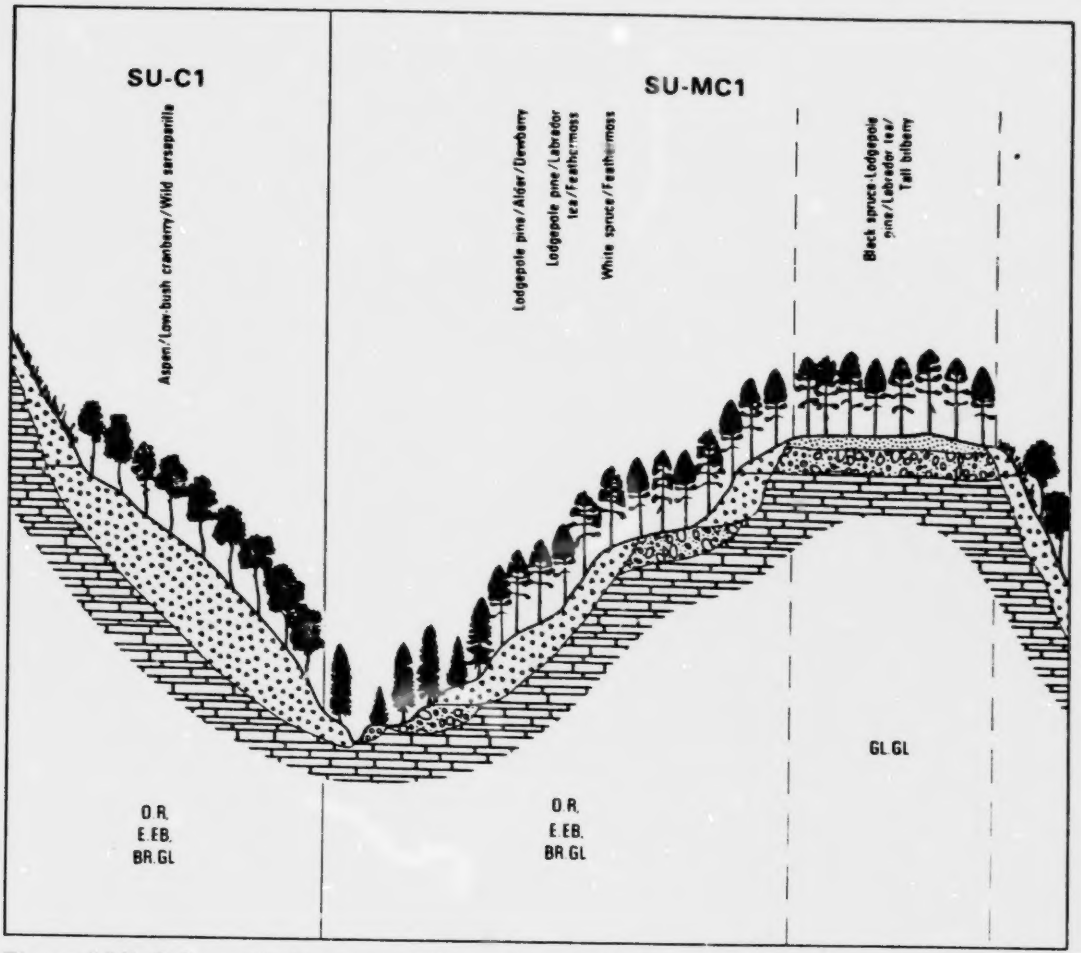

SU-C1
Aspen/Low-bush cranberry/Wild sarsaparilla
SU-MC1
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
O.R.
E.EB.
BR.GL
O.R.
E.EB.
BR.GL
GL.GL

Figure 113: Schematic Diagram of Ecosections SU-C1 and SU-MC1

Physical Conditions:

These gently to strongly sloping headwater valley walls of the Simonette River (Figure 114) consist of a complex of colluvium and till deposits of variable thicknesses overlying bedrock. Colluvial materials derived from eroded till deposits and residual sandstone materials are common on upper slope positions where slope failure and gullying are common. Lower slope positions are mantled with Continental tills which are commonly overlain by slope wash.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	kSiL-kSL	16-30	2-3	O.R, E.DYB, BR.GL	Lodgepole pine/Twisted stalk/ Feathermoss
$\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{Cvb}}{\text{R}}$	SiL-SiCL	6-15	2-3	BR.GL, E.DYB	Lodgepole pine/Labrador tea/ Feathermoss White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

The vegetation in this ecosection reflects the regional climate, with lodgepole pine forest predominating on a wide range of slopes and exposures. A few stands of white spruce are found along seepage tracks, especially on northern exposures. The lack of aspen compared to SU-C1 is a reflection of higher elevation in this ecosection.

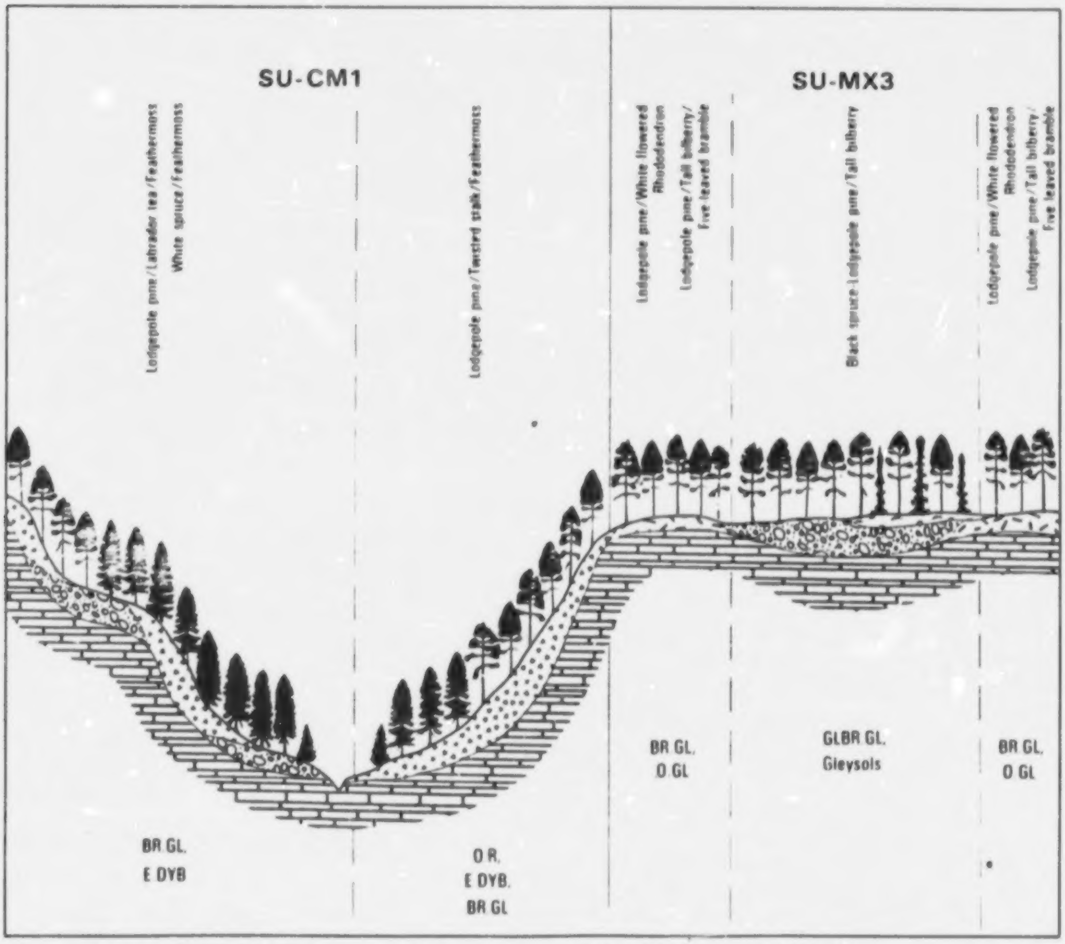

SU-CM1
SU-MX3
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Lodgepole pine/Twisted stalk/Feathermoss
Lodgepole pine/White flowered Rhododendron
Lodgepole pine/Tall bilberry/ Five leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/White flowered Rhododendron
Lodgepole pine/Tall bilberry/ Five leaved bramble
BR GL
E DYB
O R
E DYB
BR GL
BR GL
O GL
GLBR GL
Gleysols
BR GL
O GL

Figure 114: Schematic Diagram of Ecosections SU-CM1 and SU-MX3

SU-CX1

Physical Conditions:

Found along the western edge of a plateau remnant (SU-MX2), this strongly to extremely sloping system (Figure 115) consists of thin colluvial materials and residuum overlying bedrock. Colluvium is the principal surficial material and is derived from weathered sandstone and mudstones. Residual materials are common on ridge tops and sloping topography where both tills and colluvial materials have been washed away. Much of this system is prone to bedrock failure and slumping.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cv}{R}$	SiL-SL	16-70	1-2	O.R, O.DYB, E.DYB	Aspen/Buffaloberry/Showy Aster Aspen/Low-bush cranberry/Wild sarsaparilla White spruce/Low-bush cranberry/Dewberry
$\frac{Xv}{R}$	SL	6-70	2-3	E.DYB, BR.GL	Lodgepole pine/Alder/Dewberry Seral shrubland

Ecoregions: Boreal Upland
Boreal Foothills

Ecological Conditions

Exposure and seepage are the major ecological influences in this ecosection. Aspen forest is found on steep, south-facing slopes, while neutral exposures support a mixture of lodgepole pine and white spruce forest. White spruce stands are common in seepage tracks on lower slopes, while seral shrubland is found on dry, unstable upper slopes.

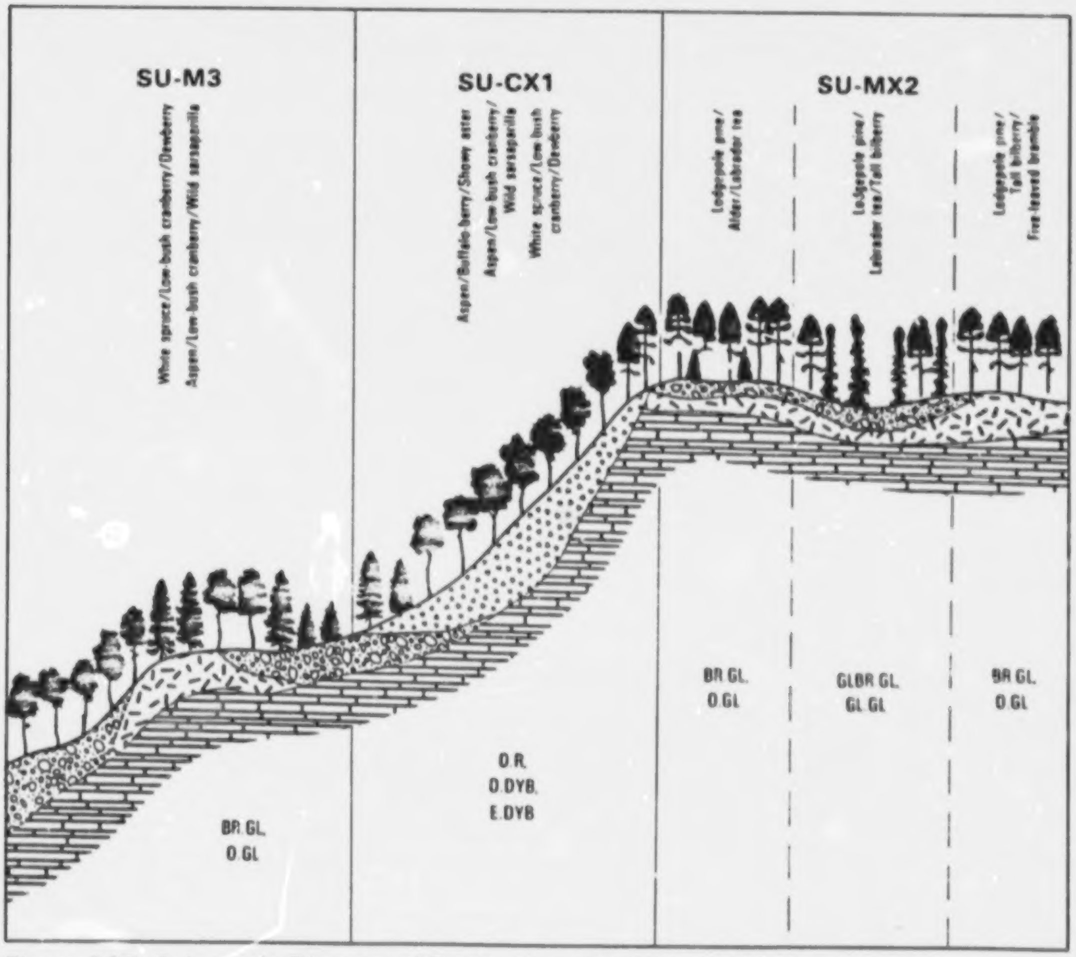

SU-M3
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Wild sarsaparilla
SU-CX1
Aspen/Buffalo-berry/Showy aster
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
SU-MX2
Lodgepole pine/Alder/Labrador tea
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Tall bilberry/Five-leaved bramble
BR.GL
O.GL
O.R
O.DYB
E.DYB
BR.GL
O.GL
GLBR.GL
GL.GL
BR.GL
O.GL

Figure 115: Schematic Diagram of Ecosections SU-CX1, SU-MX2 and SU-M3

SU-CX2

Physical Conditions:

This system (Figure 116) includes the steep ridged and gullied slopes along the eastern side of Bolton Creek valley. Colluvium is the principal surficial material with significant amounts of residual mudstones mixed with Continental tills. Slumping and gullying of unconsolidated mudstones is enhanced by the hign rates of groundwater movement.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cu}{R}$, $\frac{Xv}{R}$	SiCL-kSiL	31-70	2-3	O.R, E.DYB, BR.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Labrador tea/Feathermoss Lodgepole pine/Alder/Dewberry Lodgepole pine/Twisted stalk/Feathermoss Lodgepole pine/Hairy wild rye White spruce/Feathermoss
$\frac{Mvb}{R}$	SiCL-SiL	16-30	3-5	BR.GL, GLBR.GL, Gleysols	White spruce/Feathermoss Lodgepole pine/Labrador tea/Feathermoss

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Groundwater seepage and the increasing thickness of surficial materials causes white spruce forest to predominate on lower slopes, especially in subdued gullies. Subdued ridges and drier upper slopes support lodgepole pine forest, with a dense alder understory characteristics of these forests in seepage tracks

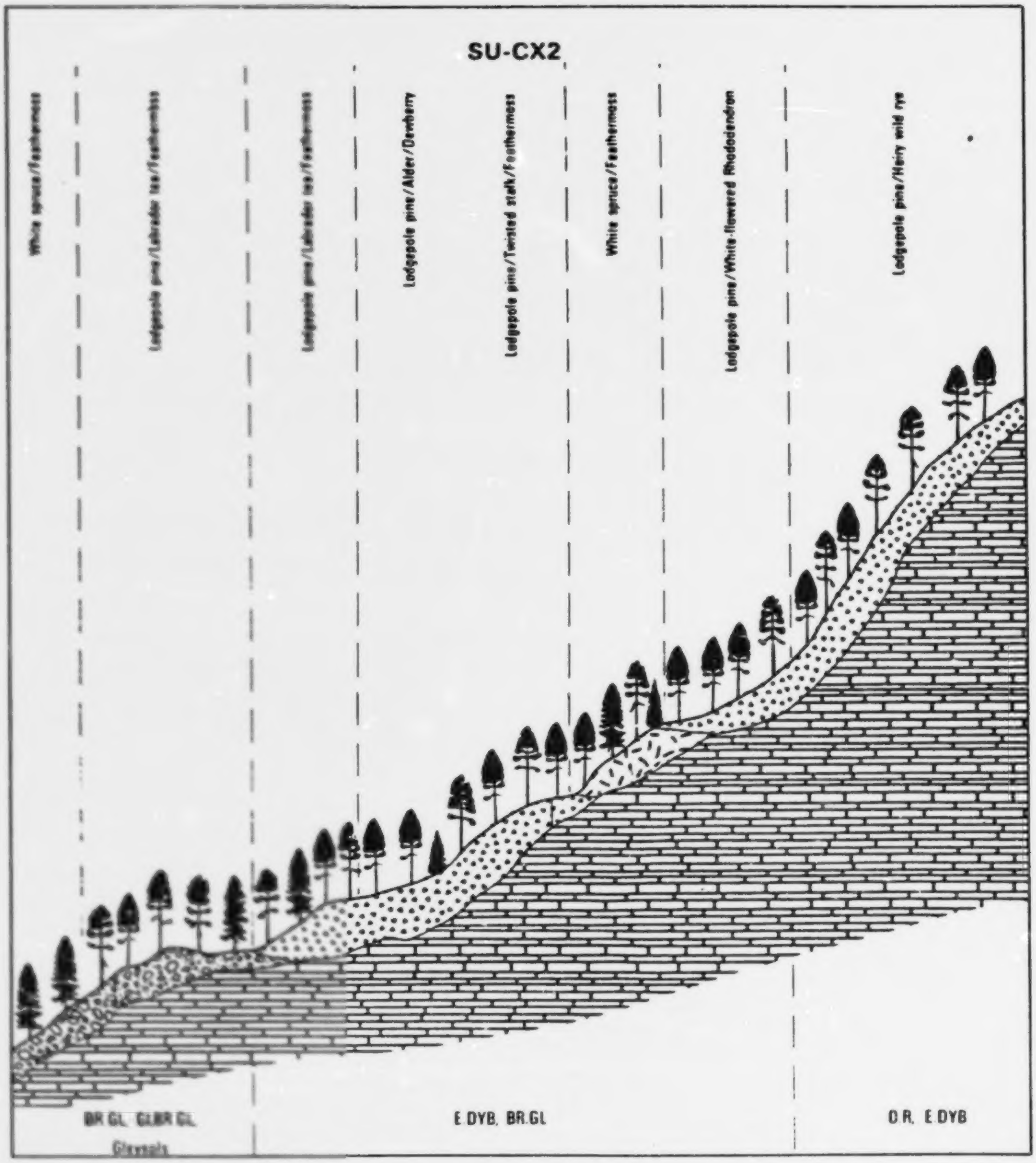

SU-CX2
White spruce/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Twisted stalk/Feathermoss
White spruce/Feathermoss
Lodgepole pine/White-flowered Rhododendron
Lodgepole pine/Hairy wild rye
BR.GL, GL.BR.GL
Gleysols
E.DYB, BR.GL
O.R, E.DYB

Figure 116: Schematic Diagram of Ecosection SU-CX2

SU-M1

Physical Conditions:

Occurring adjacent to the Simonette River This system consists of till deposits of Continental origin overlying gently to very strongly sloping bedrock (Figure 117). Surficial materials are of variable thickness and are commonly overlain by thin fluvial veneers on lower slope positions. Thin colluvial veneers overlie bedrock in several north-trending stream valleys. Pronounced surface runoff from upper slope positions has resulted in extensive gullying.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M, $\frac{Mvb}{R}$	kSiL-kL	6-30	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Wild sarsaparilla White spruce/Low-bush cranberry/Dewberry Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
$\frac{Cv}{R}$	kSiL-kL	16-45	2-3	O.R, BR.GL	Aspen/Low-bush cranberry/Wild sarsaparilla White spruce/Low-bush cranberry/Dewberry Lodgepole pine/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

Variation in aspect and topography influences the vegetation pattern. Aspen forest predominates on dry, steep southern exposures and on ridges produced by extensive gullying in the southern part of the ecosection. Topography is not as extreme in the northern part of the ecosection. A mixture of aspen and white spruce forest is found on the west side of the Simonette River, while lodgepole pine and white spruce forest occurs on the opposite side of the river where northern aspects predominate and there is substantial groundwater seepage from the Deep Valley Plateau.

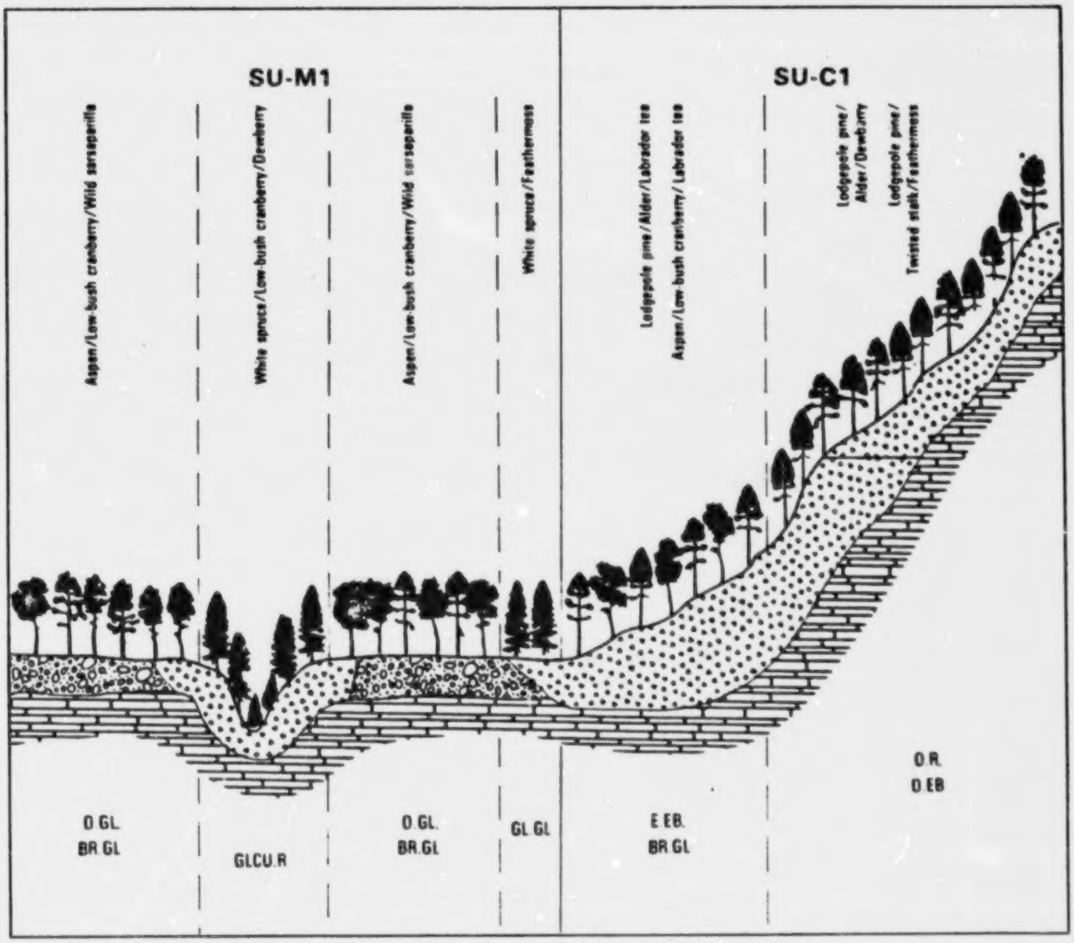

SU-M1
SU-C1
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Wild sarsaparilla
White spruce/Feathermoss
Lodgepole pine/Alder/Labrador tea
Aspen/Low-bush cranberry/Labrador tea
Lodgepole pine/
Alder/Dewberry
Lodgepole pine/
Twisted stalk/Feathermoss
O.GL.
BR.GL
GLCU.R
O.GL.
BR.GL
GL.GL
E.EB.
BR.GL
O.R.
O.EB

Figure 117: Schematic Diagram of Ecosections SU-M1 and SU-C1

SU-M2

Physical Conditions:

This system (Figure 118) consists of the highly dissected plateau remnants and headwater valleys of the Latornell River. Surficial materials consist of Continental tills of variable thicknesses which are commonly overlain by thin glaciofluvial veneers. Much of the system has been heavily dissected by post-glacial streams resulting in an inclined to strongly ridged surface expression.

MATERIAL	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
M	SiL-CL	16-30	2-3	O.GL, BR.GL	Aspen/Low-bush cranberry/Wild sarsaparilla Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
			4	GL.GL	White spruce/Low-bush cranberry/Dewberry
$\frac{\text{GFv}}{\text{M}}$	$\frac{\text{S}}{\text{SiCL}}$	6-15	2-3	E.EB, BR.GL	Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

Recurrent fires in the northern part of this ecosection have produced a characteristic pattern of aspen forest on plateau remnants and upper slopes, and a mixture of aspen and white spruce forest on lower slopes where seepage tracks are numerous. Recently burnt areas currently support dense shrubland dominated by willow and alder, reflecting the wide-spread incidence of seepage. The few lodgepole pine stands in this portion of the area are confined to thick glaciofluvial deposits on slopes.

Lodgepole pine forest covers several ridges in the southern part of the area. The occurrence of these nearly pure stands may reflect a lower frequency of fires.

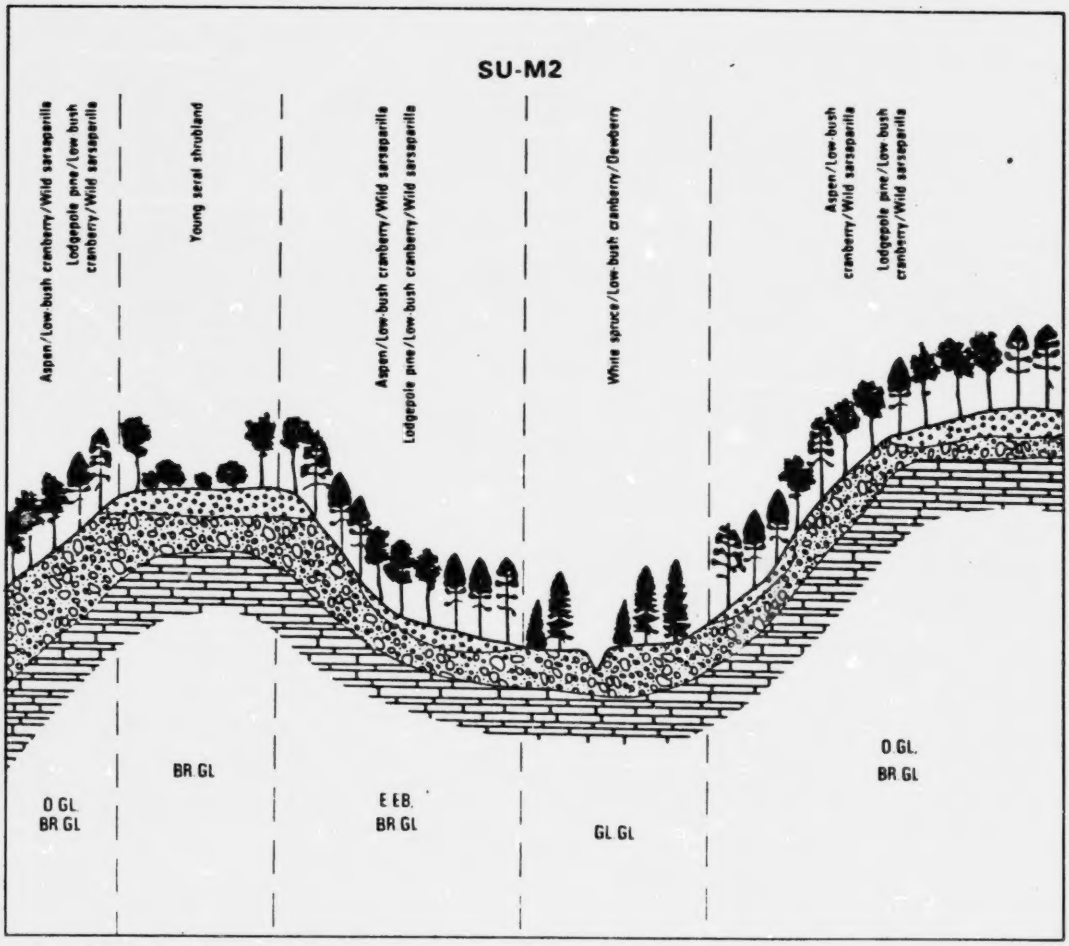

SU-M2
Aspen/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Low bush cranberry/Wild sarsaparilla
Young seral shrubland
Aspen/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
White spruce/Low-bush cranberry/Dewberry
Aspen/Low-bush cranberry/Wild sarsaparilla
Lodgepole pine/Low-bush cranberry/Wild sarsaparilla
O.GL.
BR.GL
BR.GL
E.EB.
BR.GL
GL.GL
O.GL.
BR.GL

Figure 118: Schematic Diagram of Ecosection SU-M2

SU-M3

Physical Conditions:

This extensively dissected slope (Figure 115) occurs immediately east of the Smoky River and is comprised of thick Continental tills overlying moderate to very strongly sloping bedrock. Residual sandstone materials are common along the upper slopes where till deposits are either thin or have been eroded. Thin colluvial or fluvial veneers commonly overlie till deposits on lower slope positions. Surface expression is inclined to ridged, and lower slopes are extensively gullied.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	SiCL-kSiL	9-45	2-3	BR.GL, O.GL	White spruce/Low-bush cranberry/Dewberry Lodgepole pine/Low-bush cranberry/Wild sarsaparilla Aspen/Low-bush cranberry/Wild sarsaparilla

Ecoregion: Boreal Foothills

Ecological Conditions

White spruce forest predominates on the rolling ridges in the northern part of this ecosection where groundwater discharge is pronounced. Where trees have been harvested, dense shrubland forms the current vegetation. Aspen stands are found on southern exposures.

Lodgepole pine forest predominates on the steeper slopes in the southern part of the ecosecton, with white spruce stands occurring in seepage tracks.

SU-MC1

Physical Conditions:

This inclined to ridged system (Figure 119) occurs along the gently to very strongly sloping eastern valley walls of the Simonette River and consists dominantly of Continental tills of variable thicknesses with significant portions of colluvium occurring on steeper upper slopes. Colluvial materials are derived from deposits of till and weathered bedrock.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	kSL-SiL	6-30	2-3	O.GL, BR.GL, PZ.GL	Lodgepole pine/Alder/Dewberry Lodgepole pine/Twisted stalk/ Feathermoss Lodgepole pine/Labrador tea/ Feathermoss
$\frac{Cv}{R}$	kSL-kSiL	31-45	1-3	O.R, E.EB, BR.GL	Lodgepole pine/Hairy wild rye Lodgepole pine/Alder/Dewberry

Ecoregion: Boreal Uplands

Ecological Conditions

Lodgepole pine forest covers most of the ecosection, with local variation in vegetation composition caused by aspect. On southern exposures, aspen forms a significant portion of the tree canopy, while northern exposures have stands of white spruce scattered within the pine forest.

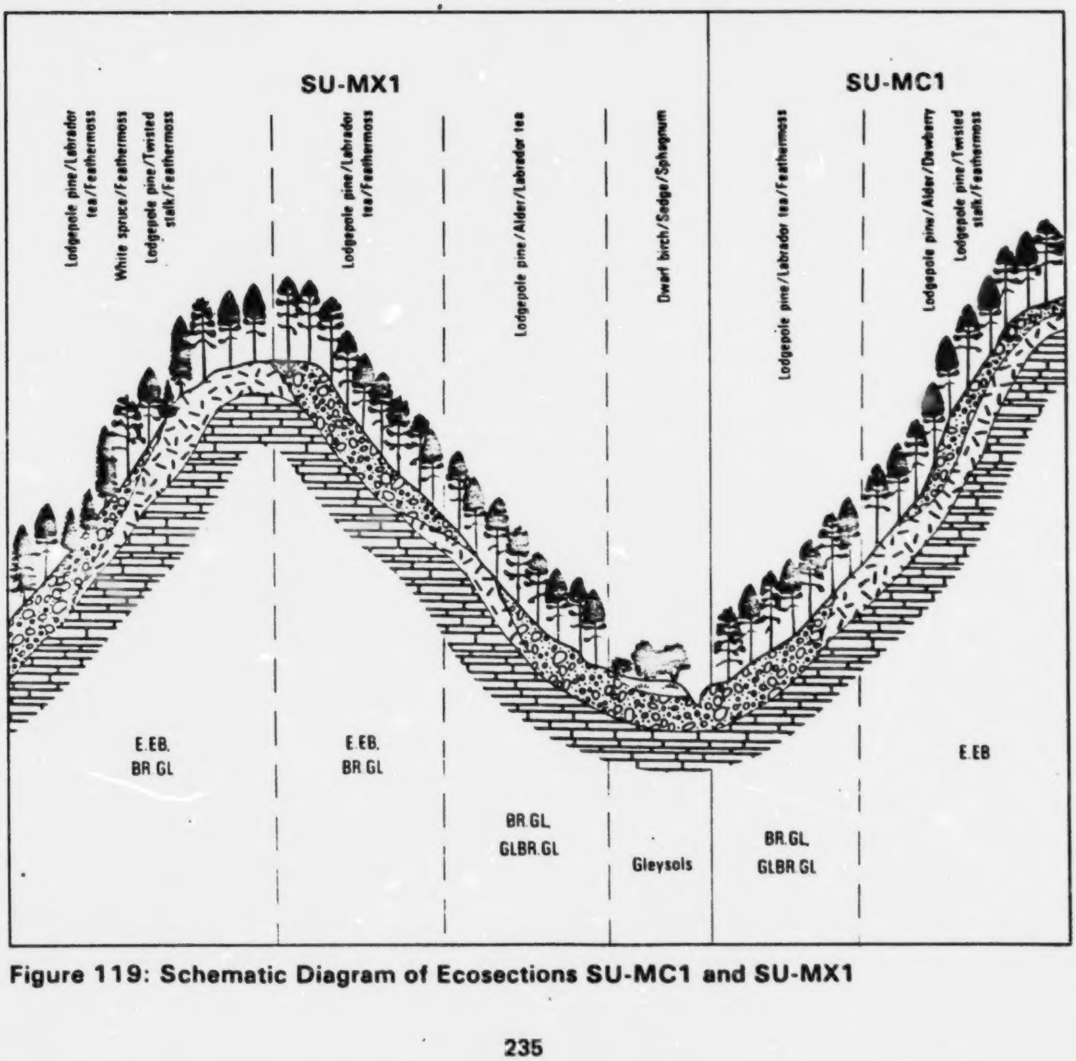

SU-MX1
SU-MC1
Lodgepole pine/Labrador tea/Feathermoss
White spruce/Feathermoss
Lodgepole pine/Twisted stalk/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Labrador tea
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Twisted stalk/Feathermoss
E.EB.
BR GL
E.EB.
BR GL
BR.GL
GLBR.GL
Gleysols
BR.GL
GLBR.GL
E.EB

Figure 119: Schematic Diagram of Ecosections SU-MC1 and SU-MX1

SU-MX1

Physical Conditions:

This system (Figure 119) includes portions of an upland plateau remnant that has been strongly dissected by numerous tributary streams of the Simonette River. The topography is strongly inclined and ridged, with slopes varying from nearly level to gentle on upland areas to moderate and very strong on side slopes. Surficial materials are comprised of a mixture of Continental tills and residual sandstone materials, the latter occurring on highly eroded ridge tops and steep upper slopes Thicker till deposits are found on lower slope positions and valley bottoms and are commonly overlain by a combination of coarser-textured fluvial and colluvial veneers. Bedrock is exposed where stream action has caused over-steepening of slopes. Small areas of sphagnum peat develop in valley bottoms where drainage is impeded.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOIL	PLANT ASSOCIATION
M, $\frac{Mb}{R}$	kL-SL	2-30	2-4	BR.GL, O.GL, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Alder/Labrador tea
$\frac{Xv}{R}$, $\frac{Mv}{R}$	kSiL-SiCL	9-45	2-4	BR.GL, E.EB, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss White spruce/Feathermoss Lodgepole pine/Twisted stalk/ Feathermoss
$\frac{Ov}{M}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Groundwater movement affects the pattern of vegetation in this ecosection. Lodgepole pine forest predominates on well-drained ridge tops and upper slopes, with a dense alder understory along seepage tracks. White spruce stands are common on lower slopes receiving seepage water, especially on northern exposures. Organic soils that have developed in groundwater discharge areas on valley bottoms support open black spruce forest and dwarf birch shrubland. White spruce groves occur on better-drained valley bottom sites.

SU-MX2

Physical Conditions:

This narrow, gently to strongly undulating plateau remnant (Figure 115) acts as a drainage divide between the Smoky and Simonette Rivers. Surficial materials consist of a complex of thin morainal veneers and residual sandstone materials overlying bedrock. Till deposits are moderately stony and are of Continental origin. The thinness of till deposits suggests that this was one of the first areas exposed following glaciation. Several small glacial meltwater channels criss-cross the area, however, no significant glaciofluvial deposits occur. Small deposits of pre-glacial gravels occur locally. Slopes vary from nearly level to strongly sloping.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mv}{R}$, $\frac{Xv}{R}$	SiCL-kSiL	2-30	2-4	BR.GL, O.GL, GL.GL, GLBR.GL	Lodgepole pine/Alder/Labrador tea Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/Tall bilberry/Five-leaved bramble

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Closed lodgepole pine forests occur across the entire ecosection. Above 1 280 m, understories are characteristic of the Subalpine ecoregion. Most of the ecosection is characterized by lodgepole pine forest typical of the Boreal Uplands ecoregion. On larger, level plateau remnants, however, there is a significant component of black spruce because shallow bedrock impedes groundwater percolation. White spruce stands are found on gentle northern exposures. Subalpine fir is common in these stands because of groundwater seepage.

SU-MX3

Physical Conditions:

This gently inclined to moderately rolling plateau remnant (Figure 114) is covered with Continental till and residuum. Residual sandstone materials predominate in areas where till deposits are either thin or absent. Extensive areas of imperfectly to poorly drained topography develop where thin surficial materials overlie slowly permeable bedrock. Colluvial materials, derived from weathered bedrock and till deposits, occur locally in the western portion of this ecosection.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xv}{R}$	SiCL-KSL	2-15	2-3	BR.GL, O.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pne/Tall bilberry/Five-leaved bramble
			4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Tall bilberry

Ecoregion: Subalpine

Ecological Conditions

This area occurs at the highest elevations in the subregion, and thus has a relatively cool, moist climate. Lodgepole pine forest covers much of the ecosection, but because of climatic differences and poor drainage due to the subdued topography, there are extensive areas of black spruce-lodgepole pine forest as well. High soil moisture levels compared to most of the subregion are also reflected in the high incidence of subalpine fir regeneration in pine stands.

2.3 The Rocky Mountain Foothills Region

The region occurs in the southwestern portion of the study area and extends from the Smoky River in the southeast to the Narraway River in the northwest (Figure 7). Elevations range from 885 m within the Smoky River valley to 2 340 m atop Coal Ridge. Relief is highly variable and generally in the order of 400 m.

The area is distinguished from the other regions within the study area on the basis of structural deformation. Bedrock ranges in age from Jurassic to Cretaceous and includes sandstones, siltstones and shales of the Alberta, Blairmore and Fernie Groups and the Nikannasin Formation with interbedded conglomerate and coal seams. The structure in the region consists of a series of southwest dipping "en echelon" thrust faults which has resulted in a series of northwest striking ridges with steep-sided valleys.

Surficial materials consist of moraine and colluvium which occur equally across the region, with residuum commonly intermixed with till deposits where tills are thin. Cordilleran tills predominate in the south and west while Continental tills are more common on lower slopes in the north and east. Minor amounts of glaciofluvial and glaciolacustrine deposits are found adjacent to the major stream courses.

The Rocky Mountain Foothills lie within parts of the Subalpine, Alpine, Boreal Uplands and Montane ecoregions resulting in a variable vegetation pattern.

Lodgepole pine, white and Engelmann spruce and aspen forests can all be found with alpine meadows and grasslands occurring locally.

The region has been subdivided into four subregions/ecodistricts. Topography, surficial materials and vegetation within each are shown in Table 23.

Table 23

MAJOR CHARACTERISTICS OF THE SUBREGIONS FOUND IN THE *ROCKY MOUNTAINS FOOTHILLS REGION

SUBREGION	TOPOGRAPHY	SURFICIAL MATERIALS	VEGETATION
Copton Foothills	Narrow northwest trending plateau remnants and dissected side slopes	Moraine, residuum, colluvium	Lodgepole pine, White spruce, Engelmann spruce, Subalpine fir, black spruce
Foothill Ridges	Northwest trending cuesta-like ridges and plateau remnants	Moraine, residuum, colluvium	Lodgepole pine, Engelmann X White spruce, shrublands
Smoky Valley	Northeast-trending ridges and uplands	Colluvium, residuum, moraine, glaciofluvial	Aspen, grasslands, Lodgepole pine, white spruce

*Note: Bedrock across the region consists of varied formations of Jurassic to Cretaceous age which have been structurally deformed into a series of northwest striking ridges.

2.3.1 Copton Foothills Subregion (Ecodistrict)

Paralleling the Kakwa Foothills subregion, the Copton Foothills extend from Sheep Creek in the southeast to Torrens Ridge in the northwest (Figure 120). Structurally, the subregion is made up by what is referred to as the Copton anticline (Irish, 1949). Geologically, this consists of a narrow, simple and nearly symmetrical fold trending northwesterly, roughly separating the contoured strata in the southwest from the gently dipping beds to the northeast. The bedrock within the subregion is made up of Lower to Upper Cretaceous strata. The ridge-like topography of the subregion gives a varied relief of approximately 850 m. A large portion of the Copton Foothills occurs within the Subalpine ecoregion with parts of the Boreal Uplands ecoregion occurring within the river valleys.

The dominant surficial material in this subregion is thin Cordilleran till intermixed with residual materials. Significant amounts of colluvium are found on most steep side slopes. In addition, minor amounts of glaciofluvial and glaciolacustrine materials are found along the major river valleys.

Lodgepole pine forests occur throughout the subregion on all surficial materials. White spruce, Engelmann spruce and subalpine fir are common on most northern exposures. More poorly drained areas support black spruce/lodgepole pine with some dwarf birch shrublands.

The Copton Foothills subregion is divided into fourteen system/ecosections (Table 24) which reflects the complex nature of the

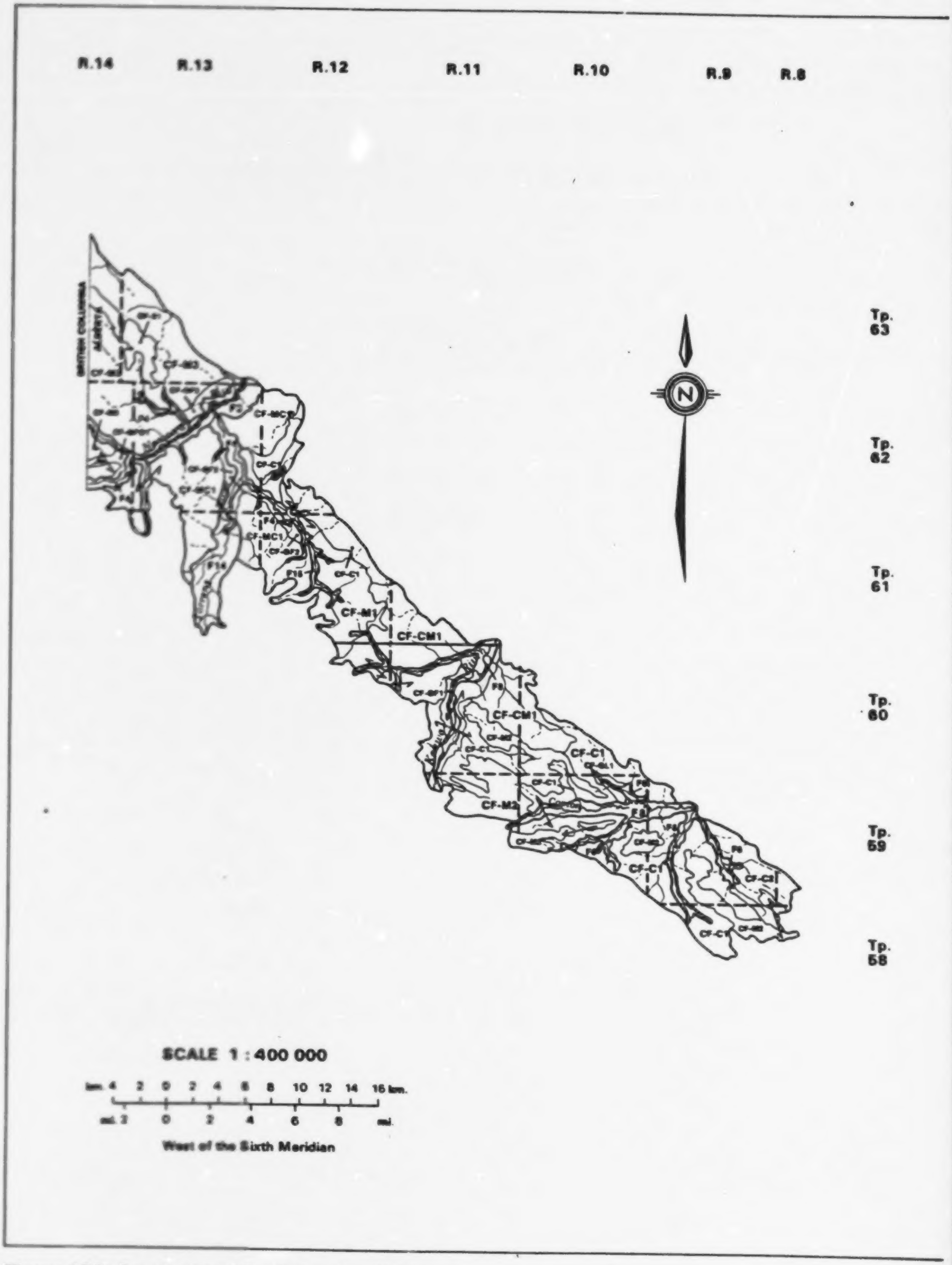

R.14
R.13
R.12
R.11
R.10
R.9
R.8
Tp. 63
Tp. 62
Tp. 61
Tp. 60
Tp. 59
Tp. 58
N
BRITISH COLUMBIA
ALBERTA
CF-MC1
CF-C1
CF-M1
CF-CM1
CF-CM1
CF-C1
CF-M2
CF-C1
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 120: Copton Foothills Subregion (CF)

Table 24

SUMMARY OF ECOSECTIONS IN THE COPTON FOOTHILLS SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
CF-C1	Extreme slopes and scarp faces	Thin colluvium with bedrock outcrops	Lodgepole pine and Engelmann spruce-Subalpine fir forest, subalpine grassland and shrubland
CF-C2	Steeply sloping ridges	Thin, moderately coarse-textured colluvium	Lodgepole pine and Engelman spruce-subalpine forest, subalpine grassland
CF-CM1	Ridged upper slopes and rolling lower slopes	Moderately coarse-textured till and colluvium	Lodgepole pine and Engelmann spruce-subalpine fir forest
CF-GF1	Nearly level outwash terraces	Glaciofluvial sand and silt and peat	Lodgepole pine and aspen forest, dwarf birch shrublands
CF-GF2	Nearly level terraces with kames and eskers	Glaciofluvial sand and silt over till	Lodgepole pine and black spruce-pine forest, treed and shrubby muskeg
CF-GFO1	Glacial meltwater channel	Thin glaciofluvial sand over till, and peat	Lodgepole pine and black spruce-pine forest, dwarf birch shrubland
CF-GL1	Gently sloping basin	Glaciolacustrine silt over glaciofluvial sand	Lodgepole pine forest and dwarf birch shrubland
CF-GL2	Nearly level terraces	Glaciolacustrine silt and clay over glaciofluvial sand	Lodgepole pine, black spruce and black spruce-lodgepole pine forest
CF-M1	Rolling lower slopes	Thin, medium-textured till with sandy overlays	Lodgepole pine, Engelmann spruce-subalpine fir and black spruce-lodgepole pine forest, dwarf birch shrublands
CF-M2	Ridged plateau	Thin, medium-textured till and residual materials	Lodgepole pine forest and dwarf birch shrublands
CF-M3	Dissected benchland	Thin, medium-textured till, colluvium and residual materials, and peat	Lodgepole pine and black spruce-lodgepole pine forest, and dwarf birch shrublands
CF-MC1	Ridged upland and rolling slopes	Moderately coarse to moderately fine-textured till and colluvium	Lodgepole pine and Engelmann spruce-subalpine fir forest
CF-X1	Ridged upland	Medium-textured residual materials	Lodgepole pine and Engelmann spruce-subalpine fir forest

landscape. A generalized description of each ecosection/system with accompanying schematic diagrams follows.

Within the subregion five distinctive fluvial systems have been identified (F8, F12, F13, F15, F17). These systems are described in detail in Section 2.5, Volume I of this report.

CF-C1

Physical Conditions:

This system (Figure 121) occurs throughout the Copton Foothills subregion and includes the scarp faces of both Hat Mountain and Copton Ridge along with the steep side slopes of the upland plateaus (CF-M2) located southeast of the Kakwa River. Surficial materials include active and inactive colluvial materials overlying bedrock. They are derived from moderately coarse to moderately fine-textured residuum and Cordilleran tills. Numerous bedrock outcrops occur, especially along the upper scarp face of Hat Mountain and Copton Ridge. Minor areas of moraine are present on gentler slopes, but are often in association with colluvium. Surface expression is inclined and ridged.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	SL-SCL	31-70	1-2	O.R, Brunisols	Lodgepole pine/Hairy wild rye Engelmann x White spruce/Feathermoss Subalpine grassland
		16-45	2-3	Brunisols, BR.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Labrador tea/Tall bilberry Engelmann x white spruce/Feathermoss
$\frac{\text{Cvb}}{\text{M}}$		10-31	3-4	BR.GL, GLBR.GL	Engelmann x white spruce/Feathermoss Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forest occurs throughout the ecosection, but aspect has a significant influence on local vegetation composition on these steep slopes. On southern aspects, the tree canopy is relatively open, and forest and grassland communities are intermixed. On cooler northern exposures the pine canopy is closed, and Engelmann spruce-subalpine fir forest is found in association with lodgepole pine.

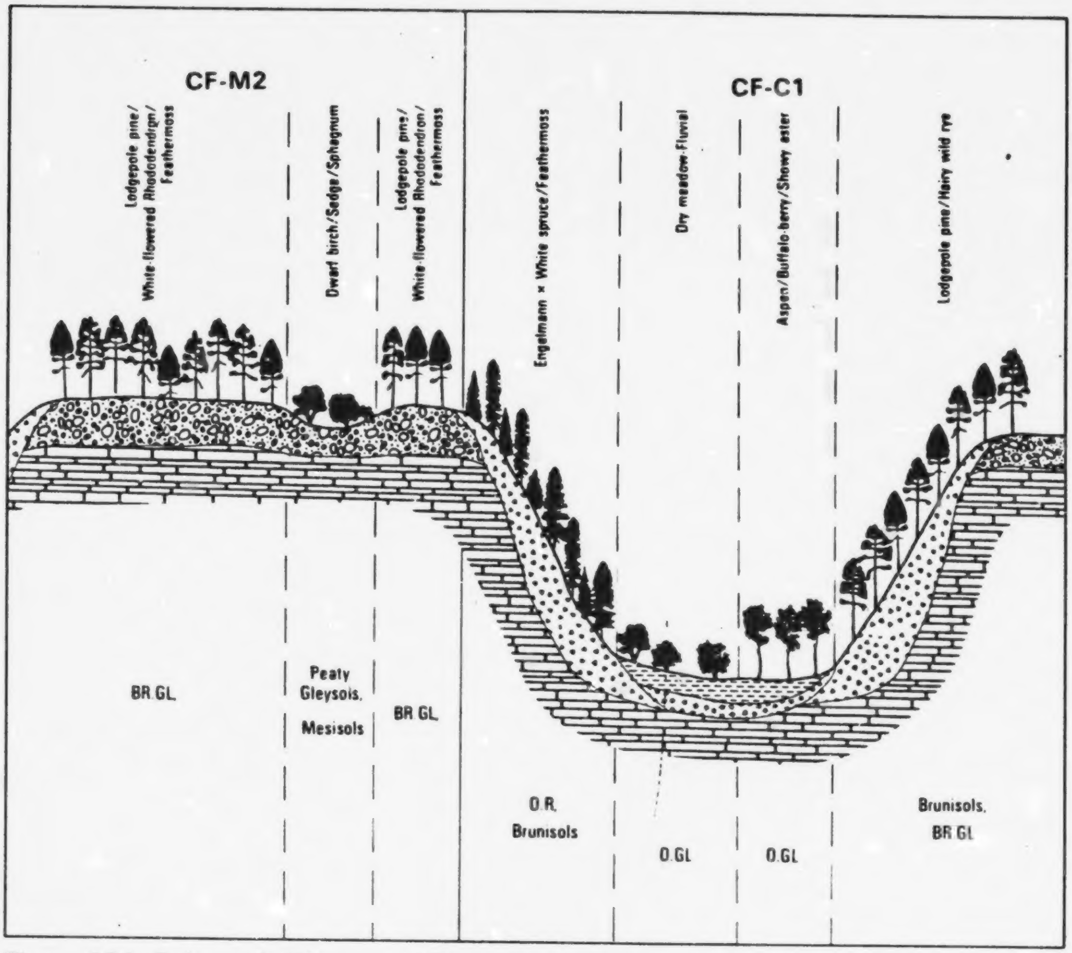

CF-M2
Lodgepole pine/ White-flowered Rhododendron/ Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/ White-flowered Rhododendron/ Feathermoss
CF-C1
Engelmann × White spruce/Feathermoss
Dry meadow-Fluvial
Aspen/Buffalo-berry/Showy aster
Lodgepole pine/Hairy wild rye
BR.GL.
Peaty Gleysols, Mesisols
BR.GL.
O.R. Brunisols
O.GL
O.GL
Brunisols, BR.GL.

Figure 121: Schematic Diagram of Ecosections CF-C1 and CF-M2

CF-C2

Physical Conditions

This system is a series of steep ridges, northwest-trending, found between Laforce Creek and Cutpick till (Figure 122). Surficial materials consist of thin deposits of active and inactive colluvium derived from locally weathered bedrock. The bedrock is relatively resistant and not prone to slumping, although there is a moderate amount of gullying on upper slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	SL-SCL	16-70	1-3	O.R. Brunisols	Lodgepole pine/Hairy wild rye Subalpine grassland, Engelmann spruce-Subalpine fir/Feathermoss Lodgepole pine/White-flowered rhododendron

Ecological Conditions

Slope and aspect are the major influences on vegetation composition. Subalpine grasslands are found on the steepest south-facing slopes. Relatively open lodgepole pine forest with a grassy understory is found on gentler slopes exposed to the southwest, while northeast exposures support lodgepole pine and Engelmann spruce-Subalpine fir forest.

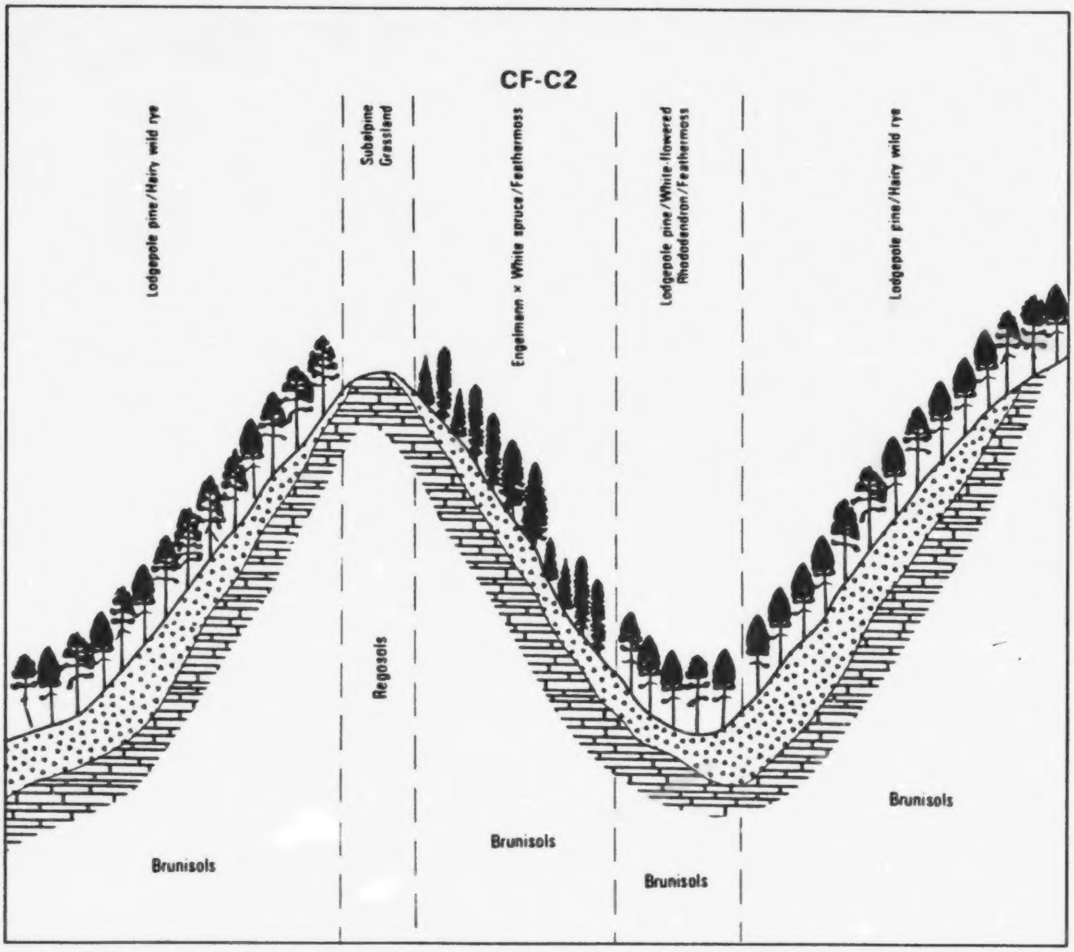

CF-C2
Lodgepole pine/Hairy wild rye
Subalpine Grassland
Engelmann × White spruce/Feathermoss
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Hairy wild rye
Regosols
Brunisols
Brunisols
Brunisols
Brunisols

Figure 122: Schematic Diagram of Ecosection CF-C2

CF-CM1

Physical Conditions

Occurring immediately adjacent to Hat Mountain and Copton Ridge, this system consists of a complex of moraine, residuum and colluvial deposits that have been extensively dissected by numerous tributary streams of the Kakwa River (Figure 123). Across the ecosection surface expression ranges from inclined, ridged and steep on upper slopes where colluvium and residium predominate to undulating, subdued and rolling within the valley bottoms where morainal deposits are much thicker. Slopes range from gentle to extreme. The high incidence of gullying and slumping on steep slopes is related to the occurrence of shales of the Shaftsbury Formation in the underlying bedrock.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SL-SiCL	3-30	2-3	BR.GL, E.EB	Lodgepole pine/Tall bilberry/Five-leaved bramble Lodgepole pine/White-flowered rhododendron
$\frac{\text{Xv/Cv}}{\text{R}}$	SL	16-50	2-3	Brunisols	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Hairy wild rye Aspen/Buffaloberry/Showy aster Engelmann x White spruce/Feathermoss

Ecoregions: Subalpine
Boreal Uplands

Ecological Conditions

Lodgepole pine forest predominates across this ecosection, with local variation in vegetation composition caused by differences in aspect and elevation. Aspen forest occurs with lodgepole pine on steep southern exposures at low elevations, while Engelmann spruce-Subalpine fir forest is associated with lodgepole pine on northern exposures.

CF-GF1

Physical Conditions:

Located adjacent to the confluence of Lynx Creek and the Kakwa River, this system consists of a series of level to nearly level outwash terraces that have been dissected by glacial meltwater channels (Figure 123). These terraces occur approximately 30-60 m above the present floodplain of the Kakwa River. Surficial materials include coarse to medium-textured glaciofluvial deposits of variable thickness. Organic accumulations of sphagnum peats occur in former meltwater channels.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GF	S-SL	0-5	1-2	Brunisols	Lodgepole pine/Labrador tea/ Feathermoss Aspen/Buffaloberry/Showy Aster
Ov/GF	Mesic/S-SL	0-2	5-6	Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

The vegetation pattern is controlled by differences in drainage conditions, with lodgepole pine forest predominant on well drained sand deposits, and dwarf birch shrublands on peat deposits in meltwater channels. Aspen forest is found at low elevations on the narrowest portions of these terraces.

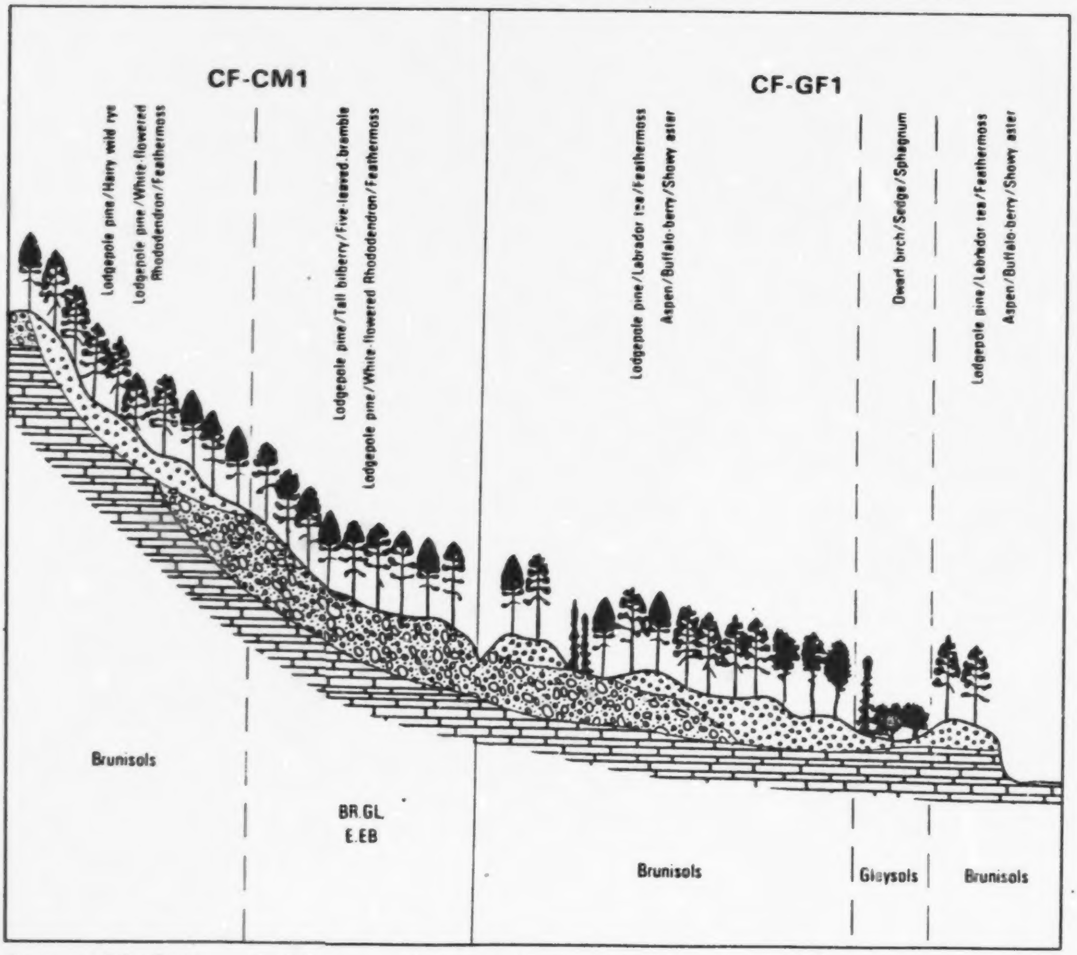

CF-CM1
Lodgepole pine/Hairy wild rye
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Brunisols
BR.GL
E.EB
CF-GF1
Lodgepole pine/Labrador tea/Feathermoss
Aspen/Buffalo-berry/Showy aster
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Labrador tea/Feathermoss
Aspen/Buffalo-berry/Showy aster
Brunisols
Gleysols
Brunisols

Figure 123: Schematic Diagram of Ecosections CF-CM1 and CF-GF1

CF-GF2

Physical Conditions:

This system includes the level to nearly level glaciofluvial terraces that border the Narraway River and Stetson Creek (Figure 124). Located between 30-250 m above the present valley floors, this ecosection consists of a complex of kames, eskers and glacial meltwater channels. Accumulations of sphagnum peat are confined to meltwater channels where the underlying bedrock is close to the surface.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GF	S-SL	0-5	2-3	BR.GL, Brunisols	Lodgepole pine/Labrador tea/ Feathermoss
$\frac{GFv}{R}$	S-SL	0-5	4	GLBR.GL	Black spruce-Lodgepole pine/Tall bilberry
$\frac{Ovb}{GF}$	$\frac{Mesic}{SL}$	0-2	5-6	Gleysols, Mesisols	Black spruce/Common horsetail/ Feathermoss Dwarf birch/Sede/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

Coniferous forest predominates across this ecosection, grading from lodgepole pine to a mixture of black spruce-lodgepole pine as availability of soil moisture increases. Open black spruce forest and dwarf birch shrublands are found in depressional areas, which are not common. A few aspen stands are found on bedrock outcrops on the north side of the Narraway River.

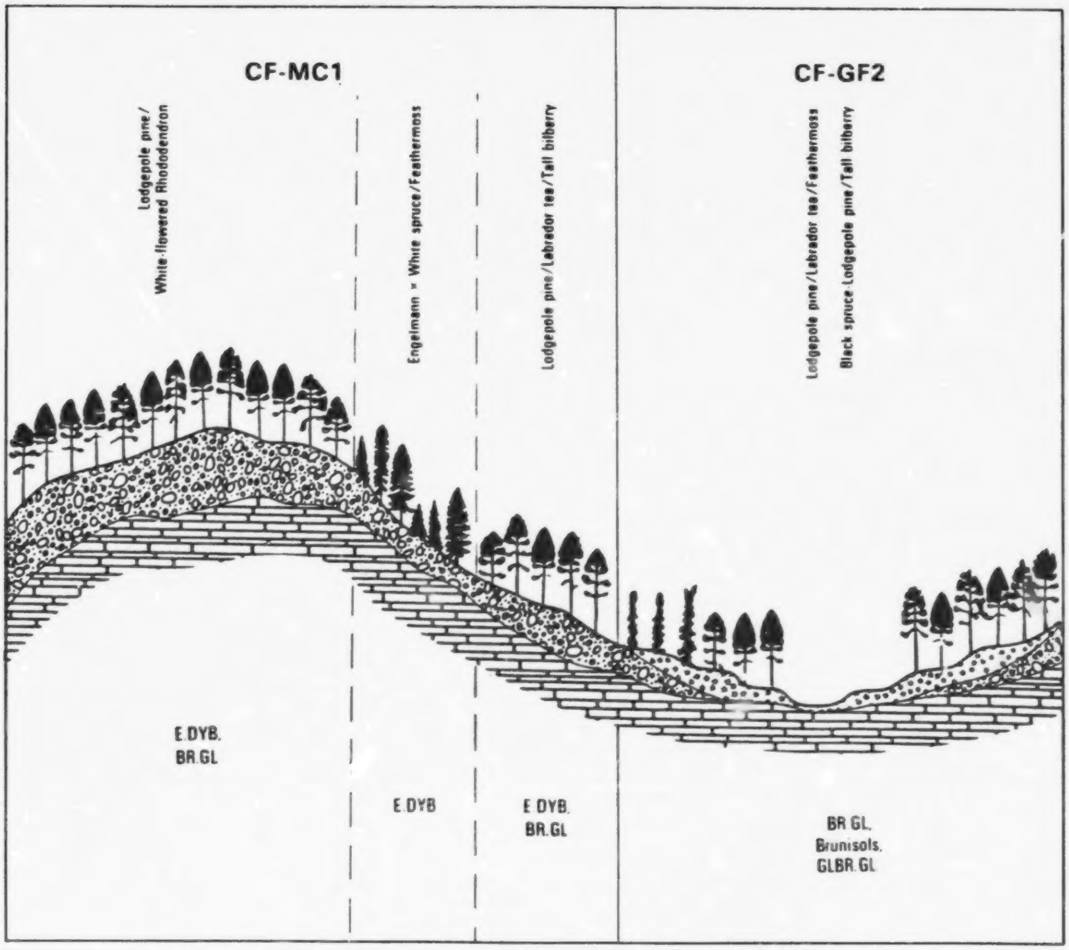

CF-MC1
CF-GF2
Lodgepole pine/
White-flowered Rhododendron
Engelmann × White spruce/Feathermoss
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/Tall bilberry
E.DYB.
BR.GL
E.DYB
E.DYB.
BR.GL
BR.GL.
Brunisols.
GLBR.GL

Figure 124: Schematic Diagram of Ecosections CF-GF2 and CF-MC1

CF-GFO1

Physical Conditions:

Located between Flume Creek and the Narraway River, this glacial meltwater channel consists of moderately well to imperfectly drained pitted deltaic deposits and poorly to very poorly drained accumulations of sedge and sphagnum peats (Figure 125). Sandy glaciofluvial deposits occur around the periphery of the system and are underlain by moderately fine textured Cordilleran tills.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GFv/M	S/SiCL	2-5	3-4	BR.GL, GLBR.GL	Black spruce-Lodgepole pine/ Labrador tea/Tall bilberry
GF	S	2-5	3	E.EB, BR.GL	Lodgepole pine/Labrador tea/ Feathermoss
Ovb/M	Mesic/SiCL	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions:

Surficial materials are coarse-textured, but input of groundwater from adjacent slopes and the slow permeability of underlying till causes imperfectly drained conditions to predominate, and most of the ecosection is covered with black spruce-lodgepole pine forest. Pine forest is found on better drained sandy ridges, and small amounts of dwarf birch shrubland occur on depressional terrain.

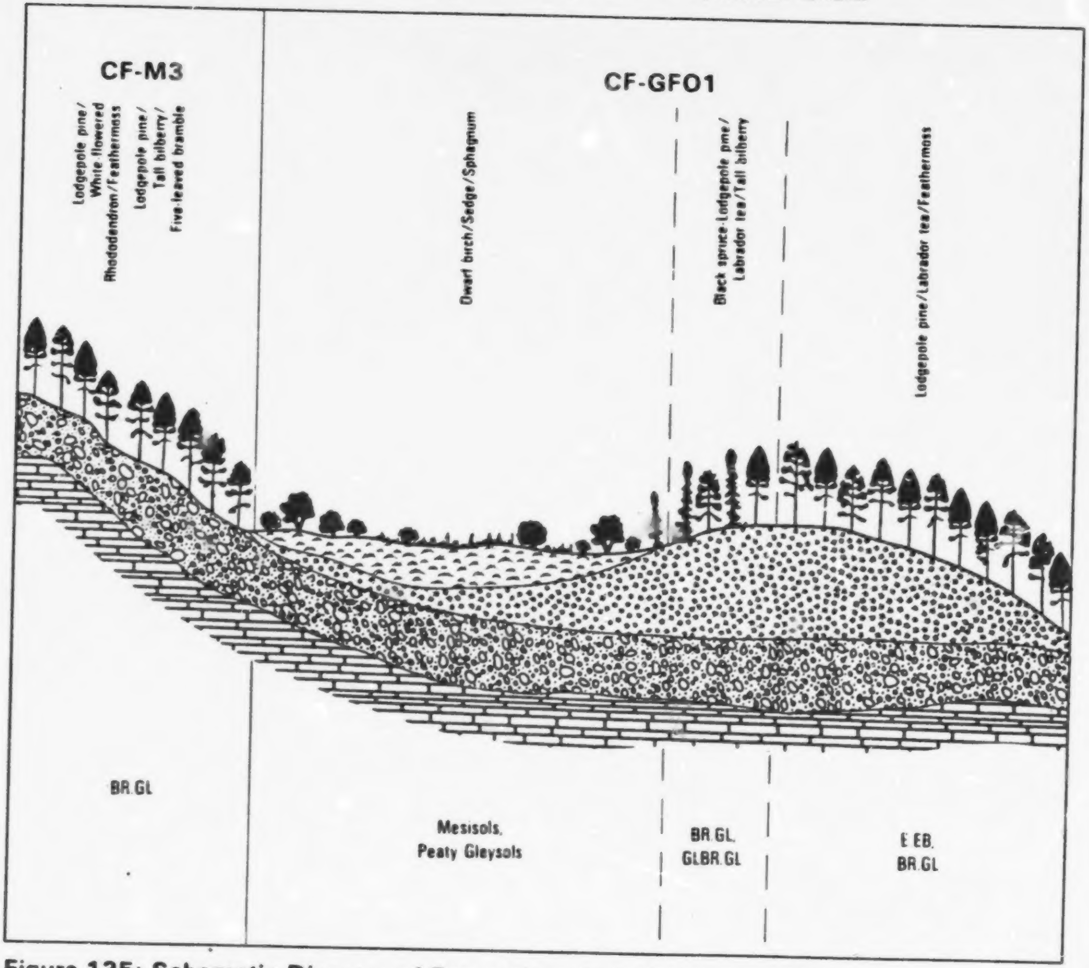

CF-M3
Lodgepole pine/ White flowered Rhododendron/Feathermoss
Lodgepole pine/ Tall bilberry/ Five-leaved bramble
CF-GFO1
Dwarf birch/Sedge/Sphagnum
Black spruce-Lodgepole pine/ Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Feathermoss
BR.GL
Mesisols, Peaty Gleysols
BR.GL, GLBR.GL
E.EB, BR.GL

Figure 125: Schematic Diagram of Ecosections CF-GFO1 and CF-M3

Physical Conditions:

Located along the lower portion of Adelaide Creek, this system consists of thin, gently sloping glaciolacustrine deposits overlying coarse-textured glaciofluvial sands (Figure 126). Slope wash materials are common adjacent to CF-C1. The glaciolacustrine sediments are the likely result of a short lived ice dam within the Copton Creek valley. The surface expression of these deposits is generally level to undulating.

MATERIALS	TEXTURE	SLCPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GLVb/GF	SiCL/S	6-9	2-3	O.GL	Lodgepole pine/Labrador tea/ Feathermoss
			3-4	CU.R, GLCU.R	Dry meadows-fluvial, Dwarf birch/ Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions:

A mixture of grassland and shrubland covers most of this ecosection, because of the prevalence of groundwater seepage. Lodgepole pine forest is found on better-drained upper slopes.

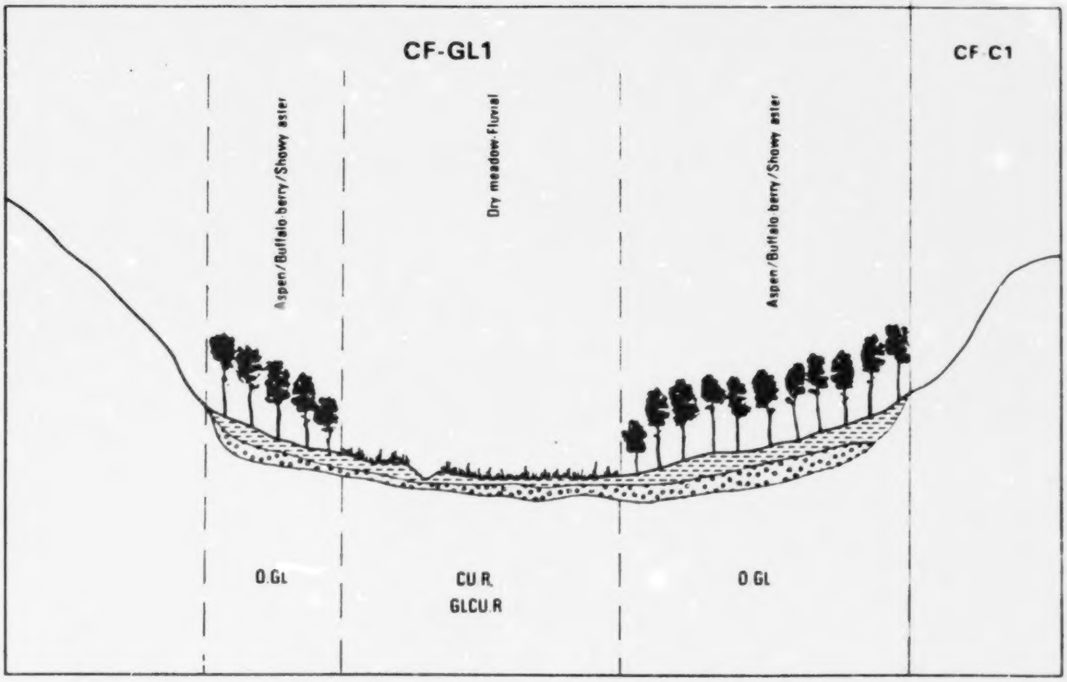

CF-GL1
CF C1
Aspen/Buffalo berry/Showy aster
Dry meadow-Fluvial
Aspen/Buffalo berry/Showy aster
O.GL
CU.R
GLCU.R
O.GL

Figure 126: Schematic Diagram of Ecosection CF-GL1

CF-GL2

Physical Conditions:

This level to nearly level glaciolacustrine terrace (Figure 127) borders Stetson Creek and includes the area between Two Lakes. These poorly drained glaciolacustrine sediments are a possible result of ice damming on either Stetson Crek or the Narraway River. Adjacent to the confluence of these two stream courses, moderately fine textured glaciolacustrine deposits are underlain by coarse textured glaciofluvial materials, leading to better soil drainage. Alluvial fans occur between the two lakes in this system, and groundwater discharge from adjacent slopes is pronounced.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Ov/GL	Mesic/CL	0-2	5-6	Peaty Gleysols, Mesisols	Black spruce/Common horsetail/Feathermoss
GLvb/GF	SiCL-CL/S	0-2	2-3	O.GL, BR.GL, GL.BRGL	Lodgepole pine/Labrador tea/Feathermoss Black spruce-Lodgepole pine/Tall bilberry
Fv/GL	rSL/CL	6-15	3-4	Brunisols, Gleyed Brunisols, CU.R	White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

Open and closed black spruce forest covers most of the ecosection because of the prevalance of poorly drained conditions. Lodgepole pine forest occurs in better drained areas, while white spruce forest is found on alluvial fans.

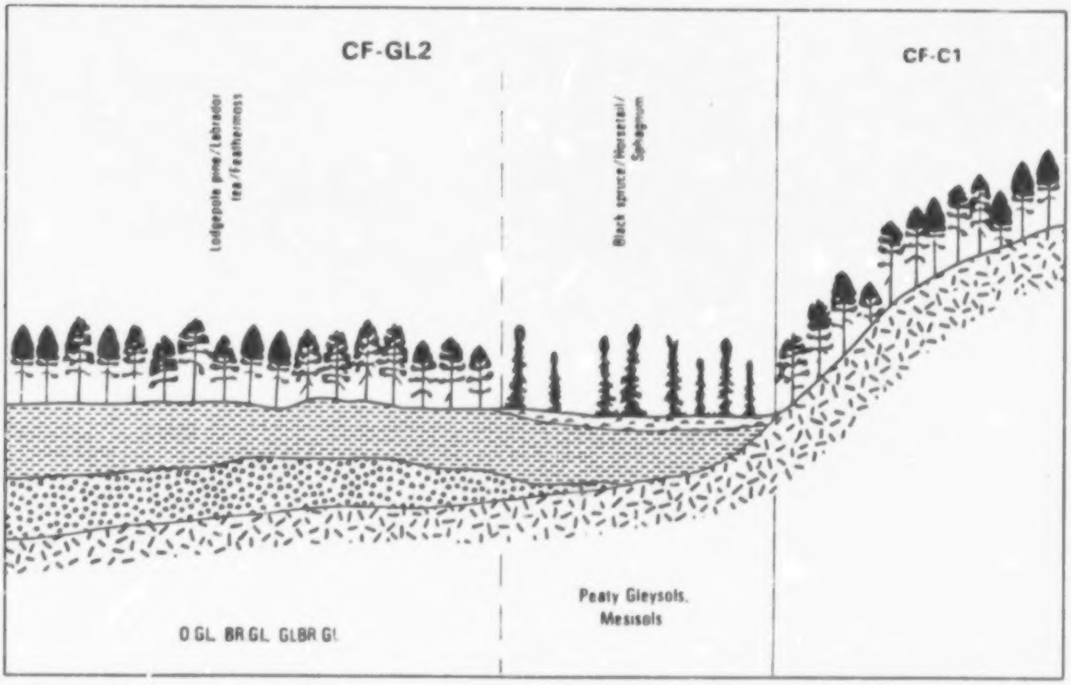

CF-GL2
CF-C1
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Horsetail/Sphagnum
Peaty Gleysols, Mesisols
O.GL BR.GL GL.BR.GL

Figure 127: Schematic Diagram of Ecosection CF-GL2

Physical Conditions:

This system includes the lower slopes of the valleys of Lynx Creek and the headwaters of Stetson and Hat Creeks (Figure 128). Surface expression is undulating to rolling, and till deposits cover most of the landscape. Fluted till is found around the confluence of Lynx Creek and the Kakwa River. Minor meltwater channels and eskers are found in the area, and thin glaciofluvial deposits overlay moraine on lower valley position. Organic deposits occur in meltwater channels and depressional terrain.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATIONS
$\frac{Mvb}{R}$	SiCL-CL	2-30	2-3	BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron Lodgepole pine/Labrador tea/Tall bilberry
			4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Labrador tea/Tall bilberry
$\frac{GFv}{M}$	$\frac{Si-S}{SiCL}$	2-5	1-2	E.DYB, BR.GL	Lodgepole pine/Labrador tea/Feathermoss
$\frac{Ovb}{M}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Variation in the availability of soil moisture is the dominant influence in the vegetation pattern, with variation in aspect having a secondary effect. Lodgepole pine forest predominates on subdued ridges, in association with stands of Engelmann spruce and subalpine fir on northern exposures. The vegetation on depressional terrain varies from black spruce-lodgepole pine forest where drainage is imperfect to dwarf birch shrubland on poorly drained organic soils.

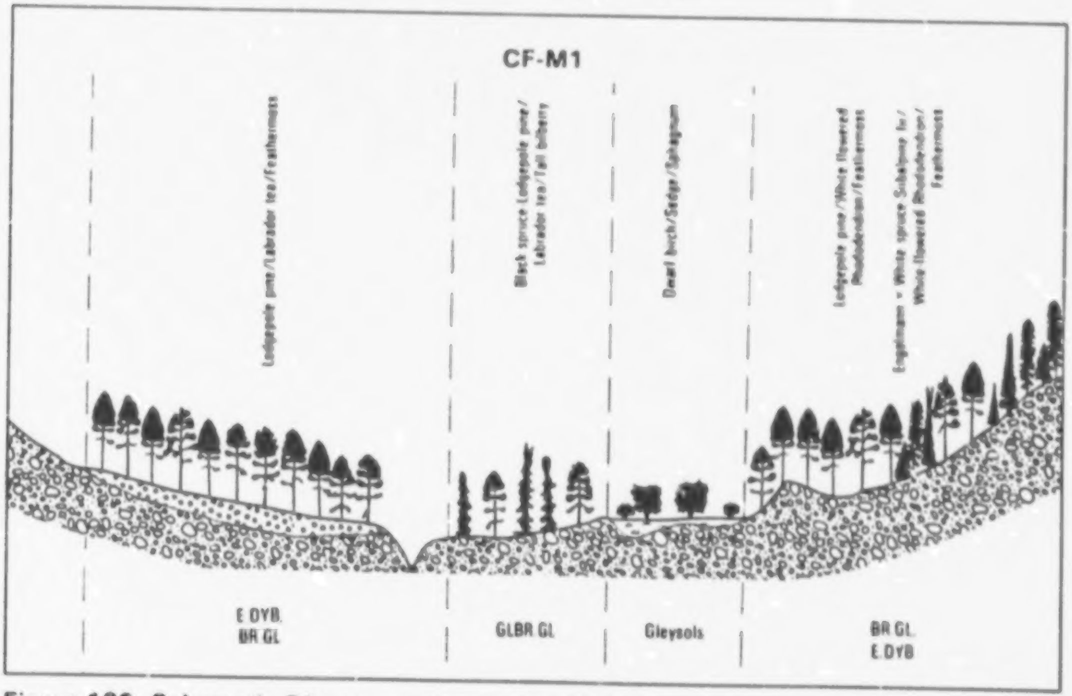

CF-M1
Lodgepole pine/Labrador tea/Feathermoss
Black spruce-Lodgepole pine/
Labrador tea/Tall bilberry
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White flowered
Rhododendron/Feathermoss
Engelmann × White spruce-Subalpine fir/
White flowered Rhododendron/
Feathermoss
E.DYB
BR.GL
GLBR.GL
Gleysols
BR.GL
E.DYB

Figure 128: Schematic Diagram of Ecosection CF-M1

CF-M2

Physical Conditions:

Consisting of the remnant portions of a former plateau, this system is found south and east of the Kakwa River (Figure 121). It has been deeply dissected by tributaries of both the Kakwa River and Copton Creek and surface expression is ridged to subdued with gentle slopes.

Surficial deposits include medium to moderately fine textured Cordilleran tills overlying resistant bedrock of the Luscar formation. Where tills have been eroded away by fluvial action, residual materials are commonly exposed. Small organic accumulations occur in depressional terrain but account for less than 10% of the total area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mv}}{\text{R}}$	SL-SiCL	6-30	2-4	BR.GL	Lodgepole pine/white-flowered rhododendron
$\frac{\text{Ov}}{\text{M}}$	$\frac{\text{Mesic}}{\text{SiCL}}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forest covers relatively well-drained bedrock-controlled ridges, while dwarf birch shrubland is found in the poorly drained depression between ridges.

CF-M3

Physical Conditions:

This system includes the benchland-like topography located north and west of the Narraway River that has been deeply dissected by Goat Creek and its tributaries (Figure 125). Moraine of Cordilleran origin overlies bedrock with colluvium found on steeper slopes, and residuum is often complexed with moraine in areas where bedrock is near the surface. Accumulations of sphagnum peats occur in very poorly to poorly drained depressions and account for less than 15% of the area. Surface expressions vary from rolling and ridged atop the plateau to inclined and undulating in valleys.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Mvb/R	SL-SiCL	2-15	2-4	BR.GL, GLBR.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Tall bilberry/Five-leaved bramble Black spruce-Lodgepole pine/Tall bilberry
Cv/R	SL	16-45	2-3	E.DYB	Lodgepole pine/Hairy wild rye/ Engelmann x white spruce/Feather-moss
Ovb/M	Mesic/SiCL	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

The vegetation pattern in this ecosection is determined by a topographically controlled soil moisture gradient. Lodgepole pine forest predominates on well-drained upper slopes, with spruce-fir stands confined to seepage tracks. Black spruce-lodgepole pine forest is found in groundwater discharge areas on lower slopes, in association with lodgepole pine forest on better drained sites. Dwarf birch shrublands cover poorly drained valley bottoms, and also occur in groundwater catchment areas on slopes.

CF-MC1

Physical Conditions:

This system occurs southeast of the Narraway River and is centered around the confluence of Stetson Creek and the Torrens River (Figure 124). Surface expression is ridged and inclined on upland areas and undulating to rolling on lower slopes. Ground moraine of Cordilleran origin is the principal surficial material across most of the ecosection. Colluvial materials are often intermixed with till deposits.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SL-SiCL	2-30	2-4	E.DYB, BR.GL	Lodgepole pine/Labrador tea/Tall bilberry Lodgepole pine/White-flowered rhododendron/Feathermoss Engelmann x White spruce/Feathermoss
$\frac{\text{Cv}}{\text{R}}$	SL	16-45	1-3	E.DYB	Engelmann x White spruce/Feathermoss Lodgepole pine/White-flowered rhododendron

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Environmental conditions are relatively uniform across this upland, most of which is covered by lodgepole pine forest. Engelmann spruce-subalpine fir stands occur on side slopes regardless of exposure, reflecting the sporadic occurrence of groundwater seepage. Small patches of dwarf birch shrubland are found in poorly drained valley bottoms.

CF-X1

Physical Conditions:

Located north and west of the Narraway River, this ecosection represents an outcrop of the Brazeau Formation (Figure 129). Surface expression is ridged and inclined with slopes ranging from nearly level to strong. Surficial materials include medium to moderately fine textured residuum which is overlain by a thin, discontinuous veneer of Cordilleran till.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Xvb/R	SL	6-9	2-3	E.DYB, O.R	Lodgepole pine/White-flowered rhododendron/Feathermoss
Mv/X	SL-SiCL	6-30	2-3	BR.GL	Engelmann x White spruce/ Feathermoss

Ecoregion: Subalpine

Ecological Conditions

The vegetation pattern is typical of the Subalpine ecoregion, with lodgepole pine forests on well drained ridges and Engelmann spruce-Subalpine fir stands confined to cooler, northern exposures.

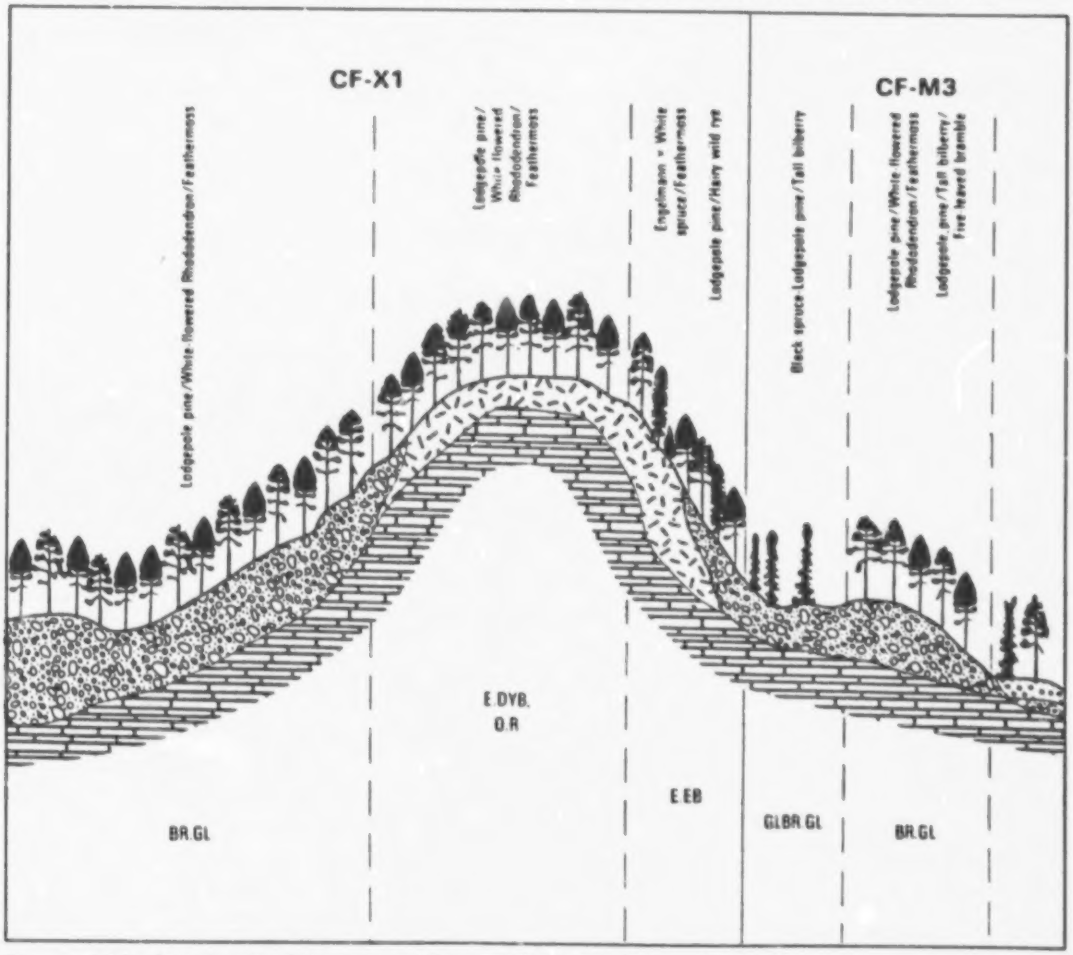

CF-X1
CF-M3
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/White flowered Rhododendron/Feathermoss
Engelmann × White spruce/Feathermoss
Lodgepole pine/Hairy wild rye
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/five leaved bramble
E.DYB.
O.R
E.EB
BR.GL
GLBR.GL
BR.GL

Figure 129: Schematic Diagram of Ecosections CF-X1 and CF-M3

2.3.2 Foothill Ridges Subregion (Ecodistrict)

This subregion is part of the outer foothills and consists of a belt of cuesta-like ridges which mark the outer limit of uplifting by tectonic processes which formed the Rocky Mountains (Figure 130). The presence of large plateau remnants and general lack of seepage distinguishes the Foothill Ridges from other subregions. Most of the area is underlain by Upper Cretaceous bedrock of the Brazeau formation, but strata of the Scollard Member which is part of the Paskapoo Formation occurs at lower elevations. The topography is relatively subdued compared to other subregions. Elevation ranges from 1 070 m along the Kakwa River to 1 850 m on Copton Ridge.

Deposits of Cordilleran and Continental till are found across most of the subregion. These deposits are characteristically thin on ridge tops, where they are associated with weathered residual materials. On lower slopes, till is often covered with veneers of slope wash.

The Foothills Ridges occur mostly within the Subalpine ecoregion, however, the Boreal Uplands ecoregion extends into the area along lower slope positions and valley bottoms. Lodgepole pine dominates across this landscape with Engelmann x White spruce common on northern slopes and at higher elevatoins. Understory composition reflects the influence of aspect, with ericaceous shrubs dominating on all but southerly aspects where forb and grass layers are more prominent.

The Foothills Ridges subregion is divided into thirteen ecosections/systems (Table 25). A more detailed description of each system, with accompanying schematic diagrams, follows the table.

The subregion was identified as having five fluvial systems (F8, F12, F13, F15, F17) which are described in Section 2.5 of Volume I.

FR-C1

Physical Conditions:

This system includes the steeply inclined southwest-facing scarp slope of Nose Mountain (Figure 131). Colluvial materials of variable thicknesses derived from tills and weathered sandstones overlie bedrock on lower portions of the slope while residuum is common on upper scarp slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	SL-SiCL	31-70	1-2	O.R, Brunisols	Lodgepole pine/Hairy wild rye
$\frac{\text{Cv}}{\text{R}}$	SL	70-90	1	O.R	White spruce/Feathermoss Aspen/Buffaloberry/Aster

Ecoregion: Boreal Uplands

Ecological Conditions

A downslope increase in the thickness of the soil produces the vegetation pattern, with aspen groves on steep upper slopes and lodgepole pine forest on middle and lower slopes. White spruce stands are common on seepage tracks on middle and lower slopes as well.

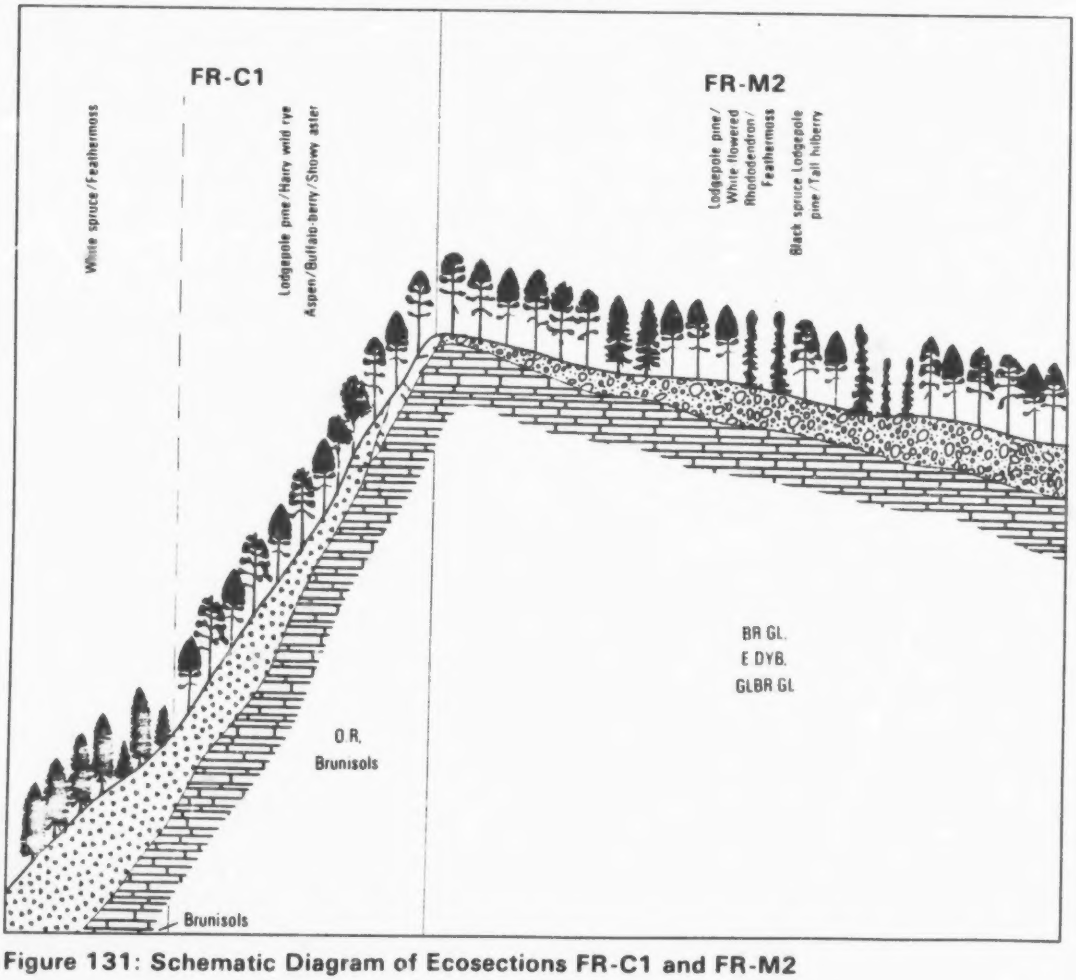

FR-C1
White spruce/Feathermoss
Lodgepole pine/Hairy wild rye
Aspen/Buffalo-berry/Showy aster
FR-M2
Lodgepole pine/ White flowered Rhododendron/ Feathermoss
Black spruce Lodgepole pine/Tall bilberry
O.R.
Brunisols
Brunisols
BR GL.
E DYB.
GLBR GL

Figure 131: Schematic Diagram of Ecosections FR-C1 and FR-M2

FR-CM1

Physical Conditions:

This system includes the moderately to steeply sloping razor back-like side slopes and valley walls of the plateau (FR-MX2) dissected by tributary streams of Nose and Ravine Creeks (Figure 132). Surface expression ranges from inclined to ridged. Surficial materials include a mixture of inactive and active colluvium derived from Cordilleran tills and residual sandstone materials. The occurrence of the Scollard Member of the Paskapoo formation in the underlying bedrock is the cause of extensive slumping. Ground moraine which occurs on less steeply sloping terrain accounts for approximately 25% of all surficial materials. Residual materials are commonly exposed where tills have been eroded away.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	L-SL	31-80	1-3	O.R., O.DYB, O.EB	Lodgepole pine/Hairy wild rye Lodgepole pine/Labrador tea/Tall bilberry White spruce/Feathermoss
$\frac{\text{Cv}}{\text{Mvb}}$	L	16-45	2-3	Brunisols, BR.GL	Lodgepole pine/Labrador tea/ Tall bilberry Lodgepole pine/White-flowered rhododendron/Feathermoss White spruce/Feathermoss
$\frac{\text{Mvb}}{\text{R}}$	L-SiCL	9-30	3	BR.GL	Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Tall bilberry/Five-leaved bramble

Ecoregions: Boreal Uplands
Subalpine

Ecological Conditions

The vegetation pattern in this ecosection is a reflection of variation in the availability of soil moisture. Lodgepole pine forest is found on plateau remnants where soils are thin and on steep-side slopes and ridgetops; small patches of grassland occur on the driest, steepest southern exposures. White spruce, and at higher elevations, Engelmann spruce-Subalpine fir, forest is wide-spread on gentle slopes and in shallow valleys of intermittent streams.

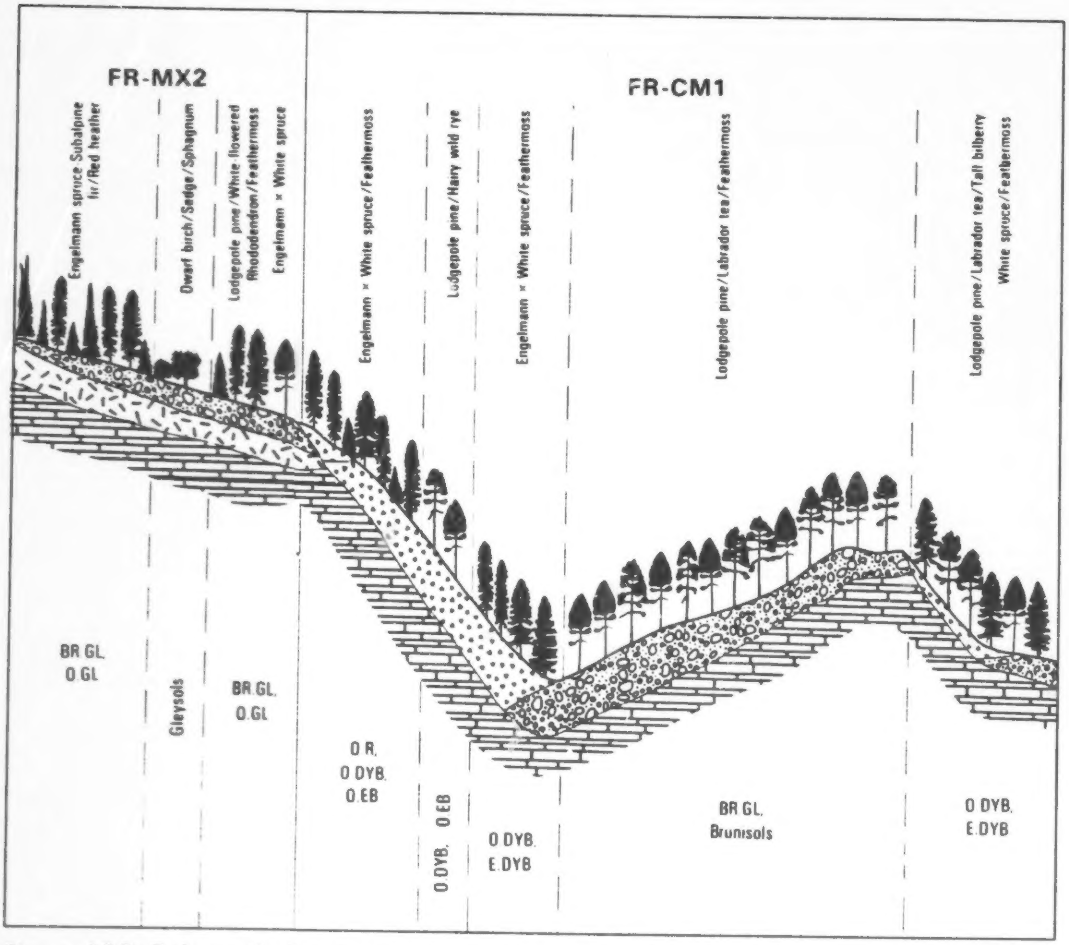

FR-MX2
Engelmann spruce Subalpine fir/Red heather
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Engelmann × White spruce
FR-CM1
Engelmann × White spruce/Feathermoss
Lodgepole pine/Hairy wild rye
Engelmann × White spruce/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Labrador tea/Tall bilberry
White spruce/Feathermoss
BR GL.
O.GL
Gleysols
BR GL.
O.GL
O R.
O DYB.
O.EB
O.DYB. O.EB
O DYB.
E.DYB
BR GL.
Brunisols
O DYB.
E.DYB

Figure 132: Schematic Diagram of Ecosections FR-CM1 and FR-MX2

FR-CM2

Physical Conditions:

Located between Copton Ridge and Morley Hill, this strongly dissected, gently to extremely sloping system is characterized by extensive slumping and gullying activity (Figure 133). This ecosection also occurs around the upland areas of adjacent to Prairie Creek. Surface expression is dominantly inclined to rolling. Active and inactive colluvium is the principal surficial material across much of the landscape. In addition to colluvium, moraine and residual materials are often complexed, especially in the vicinity of Morley Hill where deposits of Continental till begin to appear.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	SL	16-70	2	Brunisols, O.R	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Hairy wild rye Lodgepole pine/Tall bilberry/Five-leaved bramble Engelmann spruce x White spruce/ Feathermoss
$\frac{\text{Mvb}}{\text{R}}$	SiL	6-15	2-4	BR.GL, GLBR.GL	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Engelmann spruce x White spruce/Feathermoss

Ecoregion: Subalpine

Ecological Conditions

Groundwater seepage and aspect combine to produce the vegetation pattern in this ecosection. Lodgepole pine forest is found on the relatively dry southern exposures of ridges, with an open canopy and grassy understory on the steepest slopes. Cooler northern exposures support Engelmann spruce-Subalpine fir forest, and deciduous shrubland is found on the bottom of gullies and tributary valleys.

FR-M1

Physical Conditions:

This is a very gently to moderately undulating upland plateau separating Chicken Creek watersheds (Figure 133). This ecosection also includes the upland plateau area surrounding Morley Hill. Deposits consist of thin, medium to moderately fine-textured Continental tills with residual sandstone materials being exposed where tills have been washed off. Flutings and minor meltwater channels are present.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	L-SiCL	2-15	2-3	O.GL, BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Tall bilberry/Five-leaved bramble
			4	GL.GL	Black spruce-Lodgepole pine/Tall bilberry
			5-6	Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

A large portion of this subdued topography is imperfectly drained and supports black spruce-lodgepole pine forest. Lodgepole pine forest occurs on better drained ridgetops, while dwarf birch shrublands are found in poorly drained depressions and valley bottoms.

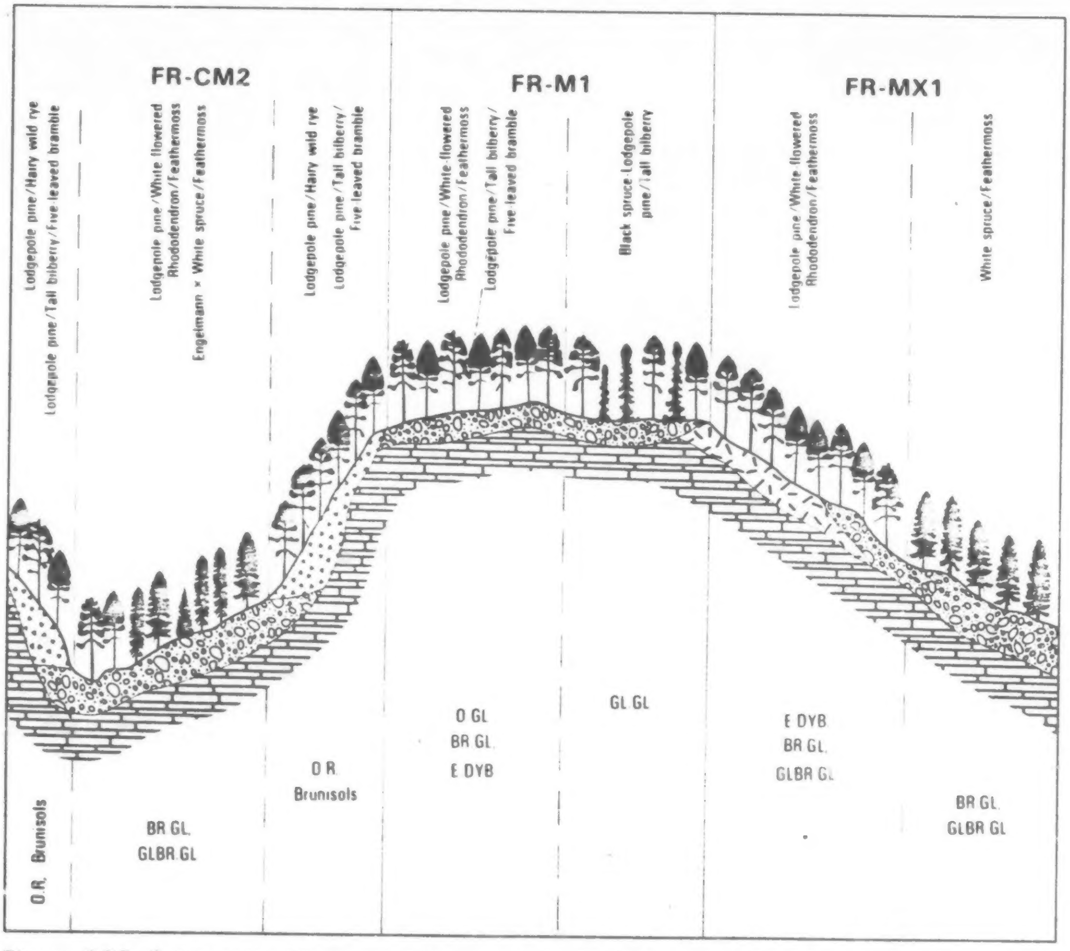

FR-CM2
FR-M1
FR-MX1
Lodgepole pine/Hairy wild rye
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/White flowered Rhododendron/Feathermoss
Engelmann × White spruce/Feathermoss
Lodgepole pine/Hairy wild rye
Lodgepole pine/Tall bilberry/Five-leaved bramble
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Lodgepole pine/White-flowered Rhododendron/Feathermoss
White spruce/Feathermoss
O.R. Brunisols
BR.GL.
GLBR.GL
O.R.
Brunisols
O.GL
BR.GL.
E.DYB
GL.GL
E.DYB
BR.GL.
GLBR.GL
BR.GL.
GLBR.GL

Figure 133: Schematic Diagram of Ecosections FR-CM2, FR-M1 and FR-MX1

FR-GF1

Physical Conditions:

Located along the north side of the Kakwa River between the outlets of Hat and Chicken Creeks, this system consists of a well to poorly drained glaciofluvial terrace (Figure 134). Surface expression is inclined to terraced. Coarse textured glaciofluvial sands overlie glaciolacustrine sediments at depth.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
GF, $\frac{\text{Fv}}{\text{GF}}$	S-gS	2-5	2-3	E.EB, BR.GL	Lodgepole pine/Labrador tea/ Feathermoss Aspen/Buffaloberry/Showy Aster
$\frac{\text{Ov}}{\text{GF}}$	$\frac{\text{Mesic}}{\text{S}}$	0-2	5-6	Peaty Gleysols	Black spruce/Cloudberry/Sphagnum Dwarf birch/Sedge/Sphagnum

Ecoregion: Boreal Uplands

Ecological Conditions

About half of this eroded terrace is forested with lodgepole pine on gravel ridges and aspen-balsam poplar on alluvial fan deposits. Dwarf birch shrubland and open black spruce forest occurs on the remainder, which is poorly drained.

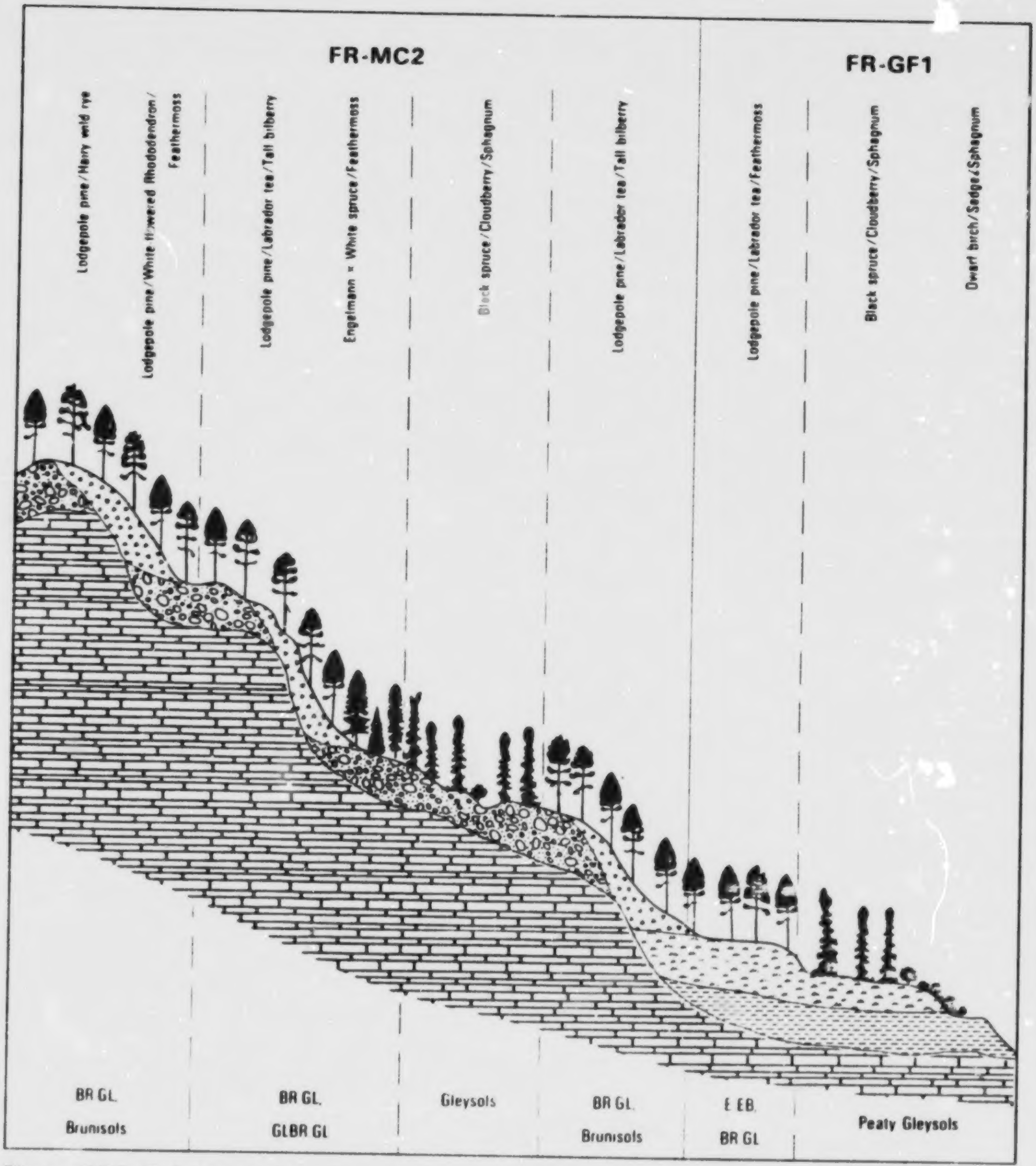

FR-MC2
FR-GF1
Lodgepole pine/Hairy wild rye
Lodgepole pine/White flowered Rhododendron/Feathermoss
Lodgepole pine/Labrador tea/Tall bilberry
Engelmann × White spruce/Feathermoss
Black spruce/Cloudberry/Sphagnum
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Labrador tea/Feathermoss
Black spruce/Cloudberry/Sphagnum
Dwarf birch/Sedge/Sphagnum
BR GL.
Brunisols
BR GL.
GLBR GL
Gleysols
BR GL.
Brunisols
E EB.
BR GL
Peaty Gleysols

Figure 134: Schematic Diagram of Ecosections FR-GF1 and FR-MC2

FR-M2

Physical Conditions:

Located on the dip slope of the Nose Mountain escarpment, this system consists of moderately sloping, medium to moderately fine-textured till deposits overlying bedrock (Figure 131). Residual sandstone materials are commonly exposed where morainal materials have been washed off. The surface expresion is inclined. Groundwater seepage is pronounced across much of the area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SL-L	2-15	2-3	BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir White-flowered rhododendron
			4-5	GLBR.GL, Gleysols	Black spruce-Lodgepole pine/Tall bilberry Engelmann spruce-Subalpine fir/White-flowered rhododendron

Ecoregion: Subalpine

Ecological Conditions

The prevalence of seepage causes Engelmann spruce-Subalpine fir forest to cover a large portion of this landscape. Lodgepole pine forest is found on better drained subdued ridges, and a mixture of black spruce-lodgepole pine forest and dwarf birch shrubland is found on larger seepage tracks at the base of slopes.

Physical Conditions:

Located between Prairie Creek and the Smoky River, this system is dissected by northeast trending upper tributary streams of Prairie Creek (Figure 135). Surface expression is inclined and ridged with the overall topography sloping to the northeast. Slopes vary from gentle to very strong. The cuesta-like ridge which forms the southern boundary of this ecosection acts as a drainage divide which separates the Smoky from the Kakwa River watersheds.

Surficial deposits include medium to moderately fine textured till overlying bedrock. Where Continental tills have been eroded by fluvial action, residuum is exposed. In lower valley positions, medium to coarse-textured fluvial veneers derived from slope wash overlie ground moraine.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$, $\frac{Xv}{R}$	SL-SiCL	16-45	2-3	BR.GL, O.GL	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron
$\frac{Fv}{M}$	S-L	6-15	2-3	BR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble
		0-5	5-6	Peaty Gleysols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Approximately 2/3 of this ecosection is forested, with lodgepole pine forest restricted to ridgetops and extensive Engelmann spruce-subalpine fir forests on gentle to side slopes. Dwarf birch shrublands predominate on poorly drained valley bottoms, but grassland also occurs on deep sandy slope wash deposits.

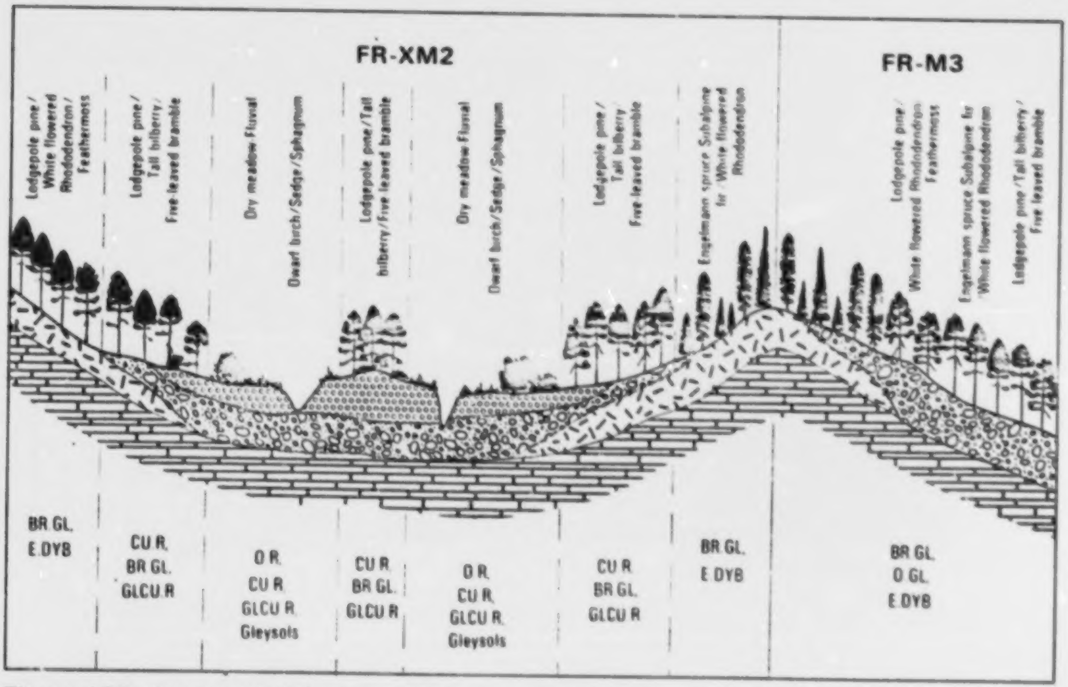

FR-XM2
FR-M3
Lodgepole pine/White flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/Five-leaved bramble
Dry meadow Fluvial
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Tall bilberry/Five leaved bramble
Dry meadow Fluvial
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/Tall bilberry/Five-leaved bramble
Engelmann spruce Subalpine fir/White flowered Rhododendron
Lodgepole pine/White flowered Rhododendron/Feathermoss
Engelmann spruce Subalpine fir/White flowered Rhododendron
Lodgepole pine/Tall bilberry/Five leaved bramble
BR GL
E DYB
CU R
BR GL
GLCU R
O R
CU R
GLCU R
Gleysols
CU R
BR GL
GLCU R
O R
CU R
GLCU R
Gleysols
CU R
BR GL
GLCU R
BR GL
E DYB
BR GL
O GL
E DYB

Figure 135: Schematic Diagram of Ecosections FR-M3 and FR-XM2

FR-MC1

Physical Conditions:

Occupying the northeast facing slopes south of the Kakwa River, this extensively dissected system (Figure 136) consists of a complex of medium to moderately fine-textured Cordilleran tills and colluvium overlying bedrock. Residual sandstone materials are commonly exposed where tills have been eroded away. The surface expression is inclined to ridged with some subdued topography.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	L-SiCL	6-30	3-4	BR.GL GLBR.GL	Lodgepole pine/Labrador tea/ Tall bilberry White spruce/Feathermoss
$\frac{\text{Xvb}}{\text{R}}$, $\frac{\text{Cvb}}{\text{R}}$	SL	6-70	2-3	BR.GL, E.EB	Engelmann x White spruce/ Feathermoss Lodgepole pine/White-flowered rhododendron

Ecoregions: Subalpine
Boreal Uplands

Ecological Conditions

Much of this ecosection has been burned and currently supports seral deciduous shrubland, especially on upper slopes. Engelmann spruce-Subalpine fir forest is common in unburned ravines on upper slopes, while lower slopes support lodgepole pine forest.

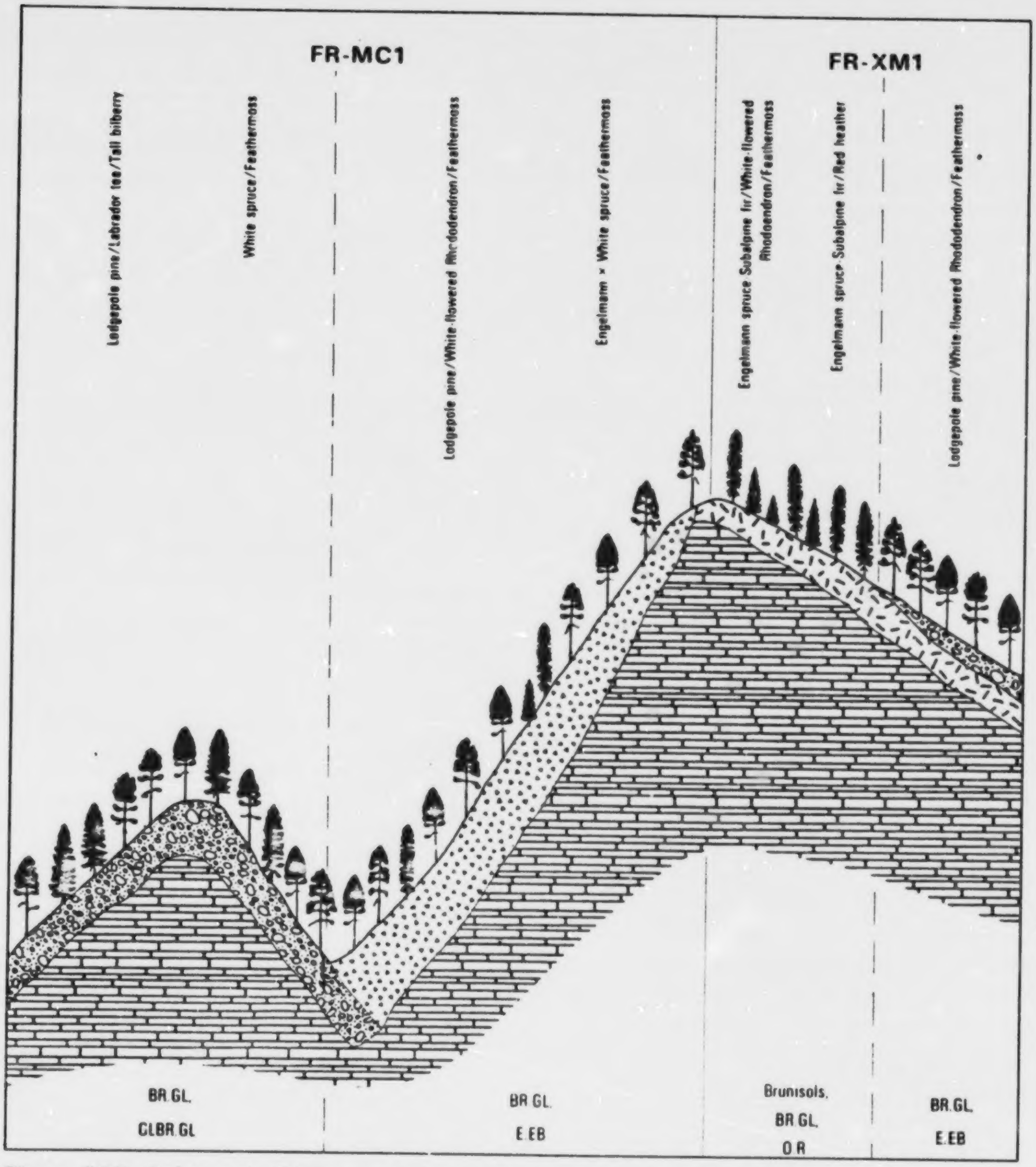

FR-MC1
Lodgepole pine/Labrador tea/Tall bilberry
White spruce/Feathermoss
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Engelmann × White spruce/Feathermoss
FR-XM1
Engelmann spruce Subalpine fir/White-flowered Rhodoendron/Feathermoss
Engelmann spruce-Subalpine fir/Red heather
Lodgepole pine/White-flowered Rhododendron/Feathermoss
BR.GL.
GLBR.GL
BR.GL.
E.EB
Brunisols,
BR.GL.
O.R
BR.GL.
E.EB

Figure 136: Schematic Diagram of Ecosections FR-MC1 and FR-XM1

FR-MC2

Physical Conditions:

The eroded valley of Chicken Creek consists of gullied and slumped terrain (Figure 134) with a mixture of colluvium and residual materials overlying soft Cretaceous bedrock on upper slopes, and thicker tills and organic deposits on lower slopes and the valley floor. Upper slopes are subdued to rolling, while mid-slopes are inclined to ridged. Deposits of till and alluvial fans occur on lower slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SL-SiCL	2-15	2-3	BR.GL	Lodgepole pine/Labrador tea-Tall bilberry Aspen/Buffaloberry/Aster
			3-4	BR.GL, GLBR.GL	White spruce/Feathermoss
			5	Gleysols	Black spruce/Horsetail/Sphagnum Dwarf birch/Sedge/Sphagnum
$\frac{\text{Cv}}{\text{M}}$	$\frac{\text{SL}}{\text{SiCL}}$	6-45	3	BR.GL, Brunisols	Lodgepole pine/Labrador tea-Tall bilberry Lodgepole pine/White-flowered rhododendron/Feathermoss Engelmann x White spruce/ Feathermoss
$\frac{\text{Cvb}}{\text{R}}$	SL-SiCL	31-70	2-3	Brunisols	Lodgepole pine/White-flowered rhododendron/Feathermoss Lodgepole pine/Hairy wild rye

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

The predominant upland vegetation is a mixture of lodgepole pine forest on ridge crests and spruce-fir forest on side slopes that is typical of the Subalpine and Boreal Uplands ecoregions. Poorly drained bottoms of tributary valleys support a mixture of black spruce forest and dwarf birch shrublands. Aspen forest is restricted to the steepest, predominantly south-facing, slopes adjacent to Chicken Creek.

FR-MX1

Physical Conditions:

This system consists of a series of sloping ridges on the northeast side of Morley Hill which have been produced by headwater erosion by unnamed tributaries of the Kakwa River (Figure 133). The surface expression is inclined and ridged, with slopes varying from gentle to strong. Surficial materials include medium to moderately fine textured Continental till, with residual sandstone materials found on upper slopes. Minor amounts of slumping have occurred on side slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOIL	PLANT ASSOCIATION
$\frac{Mv}{R}$, $\frac{Xv}{R}$	SiL-SL	2-15	3-4	E.DYB, BR.GL, GLBR.GL	Engelmann x White spruce/Feathermoss Lodgepole pine/White-flowered rhododendron/Feathermoss

Ecoregion: Subalpine

Ecological Conditions

The vegetation patern is controlled by topography, soil depth and availability of soil moisture, with lodgepole pine forest on ridge tops and upper slopes and Engelmann spruce-Subalpine fir forest on lower slopes and valley bottoms. The relatively steep slope of tributary valley floors improves drainage and prevents the development of dwarf birch shrubland that characterizes nearby ecosections.

FR-MX2

Physical Conditions:

This system is a highly dissected upland plateau surrounding the headwaters of Nose Creek (Figure 132). Surface expression varies from inclined to ridged along the western side (Hat Mountain) of the ecosection to subdued and rolling on its eastern side. Slopes range from gentle in the east to very strong in the west, especially in the vicinity of Hat Mountain. Deposits are dominantly a mixture of moraine and residual sandstones overlying bedrock, with a gradual increase in the thickness of moraine from west to east. Till deposits in the east are finer-textured and less stony than those in the west. Bedrock outcrops and thin residual materials are more prominent in the Hat Mountain area.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mv}}{\text{R}}$	L-SiCL	2-15	2-3	BR.GL, O.GL	Lodgepole pine/White-flowered rhododendron Engelmann x White spruce/White-flowered rhododendron
		0-2	4-5	Gleysols	Dwarf birch/Sedge/Sphagnum
$\frac{\text{Xv}}{\text{R}}$	L-SL	9-45	2-3	E.DYB,	Lodgepole pine/White-flowered/ rhododendron Engelmann spruce-Subalpine fir/Red heather

Ecoregion: Subalpine

Ecological Conditions

Elevation has an influence on the vegetation pattern in this ecosection, with Engelmann spruce-Subalpine fir predominant at highest elevations in the western portion, and lodgepole pine forest becoming more common toward the east. Forest stands on ridge tops often have an open, stunted canopy because of high winds and thin soils.

FR-XM1

Physical Conditions

This is a gently inclined upland area centered around Copton Ridge (Fig. 136). Rolling to undulating surface expression predominates at upper elevations, while lower elevations have been highly dissected by headwater streams. Surficial materials include moderately coarse to moderately fine-textured residual sandstone materials, overlain by thin discontinuous deposits of Cordilleran till.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Xvb}{R}$, $\frac{Mv}{R}$	SL-SiL	2-30	2	Brunisols, O.R, BR.GL	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron Engelmann spruce-Subalpine fir/Red heather

Ecoregion: Subalpine

Ecological Conditions

Extensive portions of this ecosection have been burned and currently support young seral lodgepole pine stands. The composition of mature forest reflects elevation and thus climate, with lodgepole pine forest predominating below 1 370 m in the northern part of the ecosection and Engelmann spruce-Subalpine fir forest at higher elevation. At the highest elevations, the tree canopy is stunted and open because of high winds and thin soils.

FR-XM2

Physical Conditions

This system is the dip slope of a cuesta-like ridge which separates the Smoky and Kakwa river drainage systems (Figure 135). Tributaries of Prairie Creek have dissected the lower slopes of this northeast-dipping basin.

A complex association of surficial deposits is found within the system. Upland areas are dominated by residual sandstone materials and thin deposits of moraine. Morainal deposits become thicker toward the east. Fluvial veneers derived from slope wash overlie moraine on lower slopes. Gleysols and thin organic deposits are found in discharge areas on lower slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Xv}}{\text{R}}$, $\frac{\text{Mv}}{\text{R}}$	SiL-L	2-15	2-3	BR.GL, E.DYB	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron
$\frac{\text{Fv}}{\text{M}}$	$\frac{\text{S}}{\text{SiL}}$	0-5	3-5	O.R, CU.R, GLCU.R, Gleysols	Dry meadow-Fluvial Dwarf birch/Sedge/Sphagnum
$\frac{\text{Xvb}}{\text{R}}$, $\frac{\text{Mvb}}{\text{R}}$, $\frac{\text{Fv}}{\text{M}}$	S-L	0-15	2-4	CU.R, BR.GL, GLCU.R	Lodgepole pine/Tall bilberry/Five-leaved bramble

Ecoregion: Subalpine

Ecological Conditions

A distinctive vegetation pattern is produced by the occurrence of sandy veneers and poorly drained valley bottoms in the northwestern portion of the ecosection. A mixture of grassland and deciduous shrubland communities predominates in this area of highly variable drainage. Lodgepole pine forest is confined to subdued ridges. The southeastern portion of the ecosection supports a mixture of lodgepole pine and Engelmann spruce-subalpine fir forest.

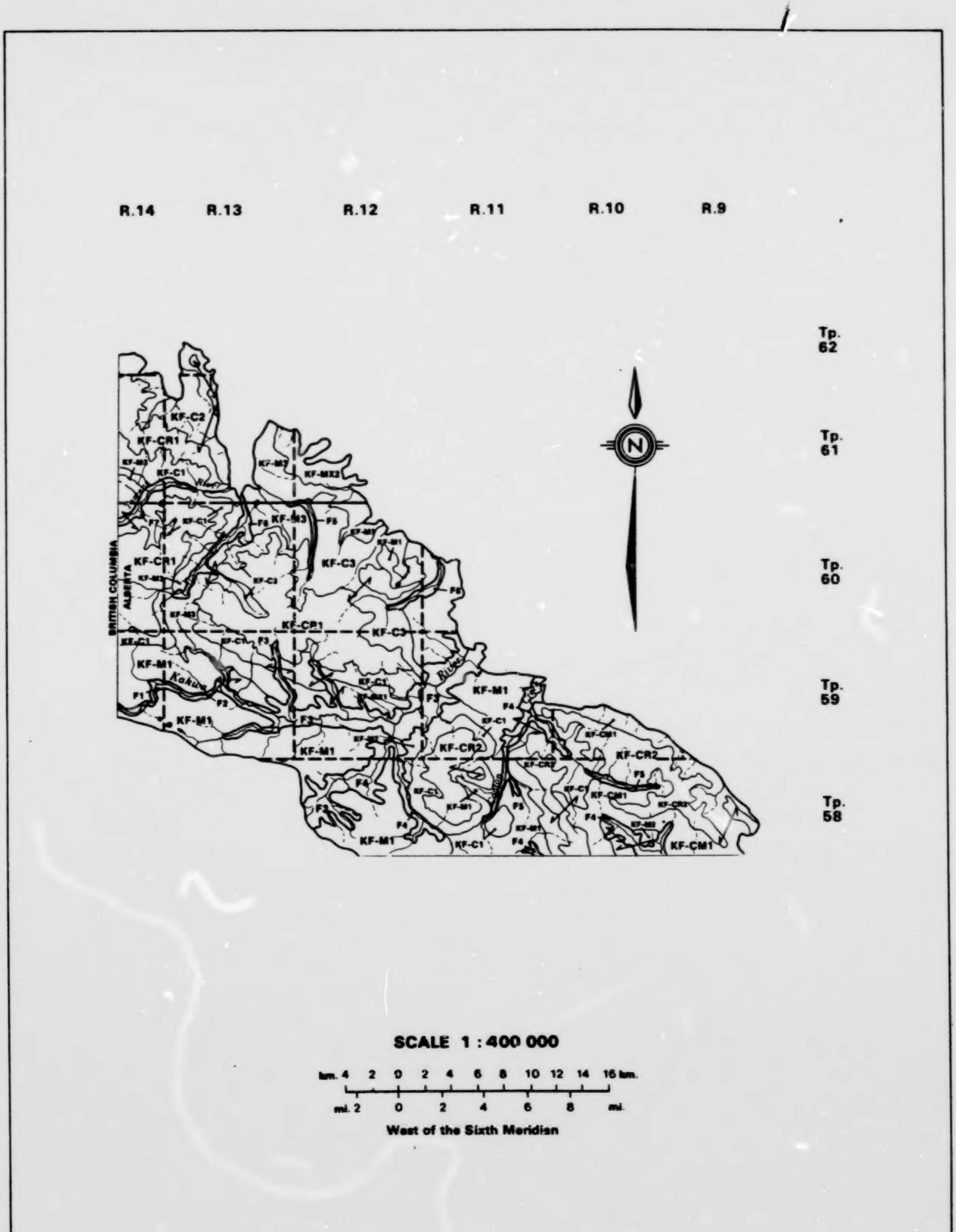
2.3.3 Kakwa Foothills Subregion (Ecodistrict)

The Kakwa Foothills are located in the southwestern portion of the study area adjacent to the Rocky Mountains (Figure 137). The subregion consists of a series of subparallel, highly folded and faulted bedrock ridges and glacially sculptured valleys that are presently occupied by the Kakwa and Torrens Rivers and their tributaries. The underlying bedrock consists primarily of sandstones and shales of the Alberta and Blairmore groups and of the Nikanassin Formation. Highly resistant conglomerate of the Cadomin Formation forms a cap rock on many of the ridges and contributes to their resistance to erosion. Relief across much of the landscape is extreme with elevations ranging from 1 200 m along the Kakwa River to 2 340 m on Coal Ridge.

Cordilleran till and colluvium are the dominant surficial materials in the subregion. The till deposits are found along the valleys and on top of the plateaus. At low elevations, highly compacted basal tills are present. Most steep slopes are covered with colluvium and avalanche tracks are common. Bedrock is generally exposed on the upper portions of high ridges.

The Kakwa Foothills occur mainly within the Subalpine ecoregion, with barren ridge tops falling within the Alpine ecoregion.

Lodgepole pine forests are found at lower elevations, while Engelmann spruce-subalpine fir occur at higher elevations. Often, aspect will alter this pattern locally. The high ridges in the Alpine Ecoregion support a mixture of sedge meadows, shrublands and herblands, but are generally sparsely vegetated.


R.14
R.13
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Tp. 62
Tp. 61
Tp. 60
Tp. 59
Tp. 58
N
BRITISH COLUMBIA
ALBERTA
KF-C2
KF-CR1
KF-C1
KF-M2
KF-MX2
KF-M3
KF-C3
KF-CR1
KF-C3
KF-C1
KF-M1
Kakwa
River
F1
F2
F3
F4
F5
F6
F7
KF-M1
KF-C1
KF-CR2
KF-CM1
KF-CR2
KF-CM1
KF-C1
KF-M1
SCALE 1 : 400 000
km. 4 2 0 2 4 6 8 10 12 14 16 km.
mi. 2 0 2 4 6 8 mi.
West of the Sixth Meridian

Figure 137: Kakwa Foothills Subregion (KF)

The subregion has been divided into eleven section/systems which are described following Table 26. In addition, eight fluvial systems were identified (F1, F2, F3, F4, F5, F6, F7, F14) and are described in Section 2.5 of Volume I.

Table 26

SUMMARY OF ECOSECTIONS IN THE KAKWA FOOTHILLS SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
KF-C1	Steep side slopes	Thin, medium-textured colluvium with bedrock outcrops	Engelmann spruce-Subalpine fir and Lodgepole pine forest
KF-C2	Steep upper slopes and undulating lower slopes	Thin, medium-textured colluvium and till	Lodgepole pine and Engelmann spruce-Subalpine fir forest, Dwarf birch shrublands
KF-C3	Ridged and gullied strong slopes	Thin, moderately-fine textured colluvium	Engelmann spruce-Subalpine fir and Lodgepole pine forest
KF-CM1	Steep, ridged lower slopes	Thin, medium-textured till and colluvium	Engelmann spruce-Subalpine fir and Lodgepole pine forest
KF-CR1	Steep mountain tops	Thin, moderately fine-textured colluvium and bedrock	Alpine meadows, Engelmann spruce-Subalpine fir forest
KF-CR2	Steep mountain tops	Thin, medium-textured colluvium and bedrock	Alpine meadows and krummholz
KF-M1	Rolling to ridged lower slopes	Moderately coarse-textured till and peat	Engelmann spruce-Subalpine fir forest and Dwarf birch shrubland
KF-M2	Undulating to ridged benchland	Medium-textured till	Lodgepole pine forest and Dwarf birch shrubland
KF-M3	Inclined to rolling lower slopes	Thin, medium-textured till and residual materials	Lodgepole pine and Engelmann spruce-Subalpine fir forest
KF-MX1	Subdued ridge	Medium-textured till and residual materials	Lodgepole pine and Engelmann spruce-Subalpine fir forest, Dwarf birch shrubland
KF-MX2	Undulating to rolling plateau	Medium-textured residual materials overlain by thin till	Lodgepole pine and Engelmann spruce-Subalpine fir forest

Physical Conditions:

Occurring throughout the Kakwa Foothills on strongly to extremely sloping terrain below the treeline, this system consists of colluvial materials of variable thickness overlying bedrock (Figure 138). Colluvium is derived from disintegrated sandstones and shales. Surface expression is inclined, steep and ridged. Conglomerate erratics and bedrock outcrops are common.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cvb}{R}$	rSiL-rSL	16-70	1-3	O.R, Brunisols	Engelmann spruce-Subalpine fir/White-flowered rhododendron Engelmann spruce-Subalpine fir/Red heather Lodgepole pine/White-flowered rhododendron Lodgepole pine/Hairy wild rye

Ecoregion: Subalpine

Ecological Conditions

Exposure is the major ecological influence on these steep slopes, with lodgepole pine forest on south-facing slopes and a mixture of lodgepole pine and Engelmann spruce-Subalpine fir on neutral and north-facing areas. Upper slopes are often non-vegetated as a result of thin soils and avalanches.

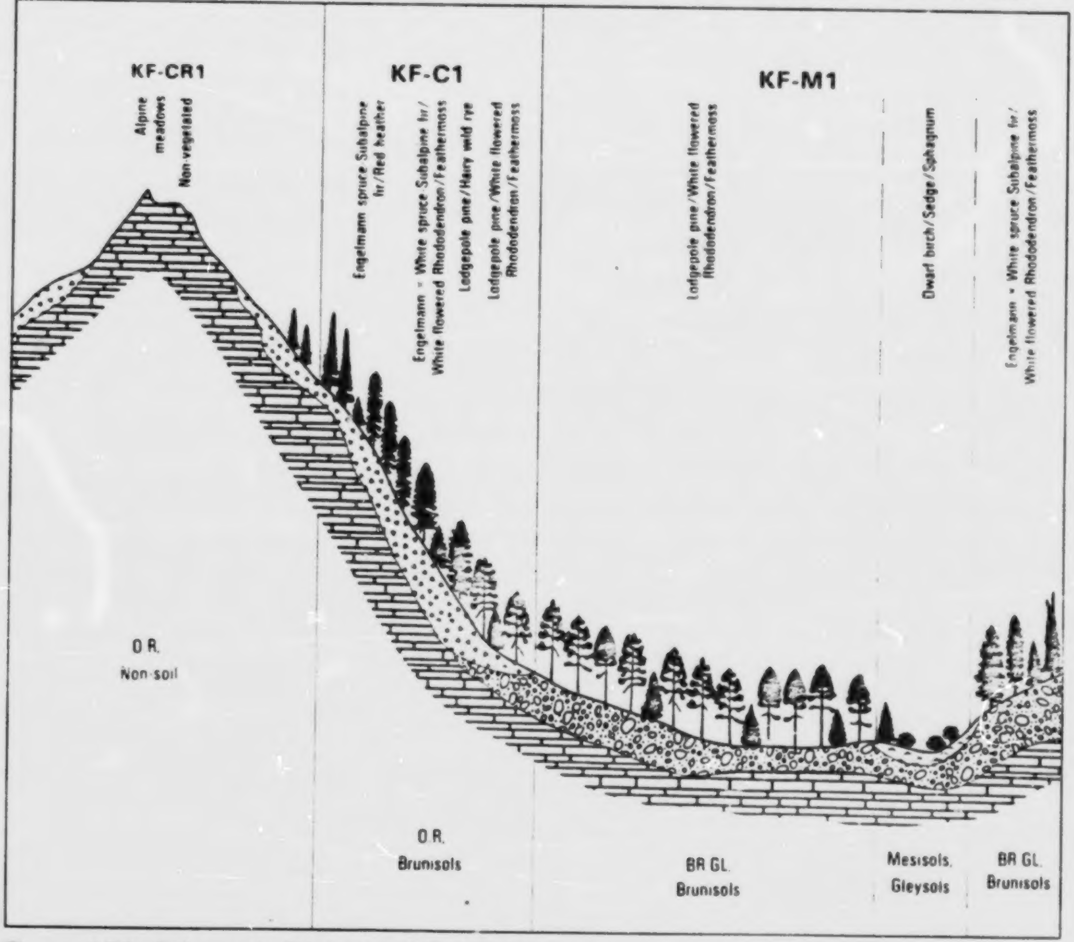

KF-CR1
Alpine meadows
Non vegetated
KF-C1
Engelmann spruce Subalpine fir/Red heather
Engelmann × White spruce Subalpine fir/White flowered Rhododendron/Feathermoss
Lodgepole pine/Hairy wild rye
Lodgepole pine/White flowered Rhododendron/Feathermoss
KF-M1
Lodgepole pine/White flowered Rhododendron/Feathermoss
Dwarf birch/Sedge/Sphagnum
Engelmann × White spruce Subalpine fir/White flowered Rhododendron/Feathermoss
O.R.
Non-soil
O.R.
Brunisols
BR GL.
Brunisols
Mesisols,
Gleysols
BR GL.
Brunisols

Figure 138: Schematic Diagram of Ecosections KF-C1 and KF-M1

KF-C2

Physical Conditions:

This system is situated between Torrens Ridge and the Narraway River and consists of active and inactive colluvium derived from Cordilleran tills, residual materials and disintegrated bedrock (Figure 142). Colluvial materials overlying bedrock are the principal surficial materials, however, morainal "islands" occur sporadically on lower slope positions. Surface expression ranges from inclined and steep on upper slopes to undulating and subdued on lower slope positions.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cvb}{R}$	rSiL-SL	31-70	1-3	O.R, Brunisols	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron Engelmann spruce-Subalpine fir/Red heather
		16-30	4-5	GLBR.GL, Gleysols	Engelmann x white spruce/Feathermoss Dwarf birch/Sedge/Sphagnum
$\frac{Mb}{R}$	SiL-SiCL	16-30	2-3	BR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble

Ecoregion: Subalpine

Ecological Conditions

Elevation, a downslope increase in soil thickness and local variation in drainage produce the vegetation pattern. Open Engelmann spruce-Subalpine fir forests predominate at high elevations where soils are thin. Lower elevation support a mixture of spruce-fir and lodgepole pine forest, while dwarf birch shrubland is found on poorly drained valley bottoms.

KF-C3

Physical Conditions:

Bounded on the east by Lynx Creek and on the west by Lick Creek, this system consists of moderate to very strongly sloping upland areas and side slopes (Figure 139). Colluvial materials are derived from Cordilleran tills, residuum and disintegrated bedrock of the Shaftsbury Formation. Surface expression varies from inclined and ridged to steep and gullied, with slumping and bedrock outcrops common.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	rCL-rSiL	16-45	1-3	O.R, Brunisols	Lodgepole pine/White-flowered rhododendron Lodgepole pine/Hairy wild rye Engelmann spruce-Subalpine fir/ White-flowered rhododendron Engelmann spruce-Subalpine fir/Red heather Subalpine grassland

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forest covers most of this ecosection, with Engelmann spruce-Subalpine fir stands confiend to tributary valleys and lower slopes where soils are thicker and the soil moisture regime more favorable. Steep upper, south-facing slopes are extremely dry and support grassland communities.

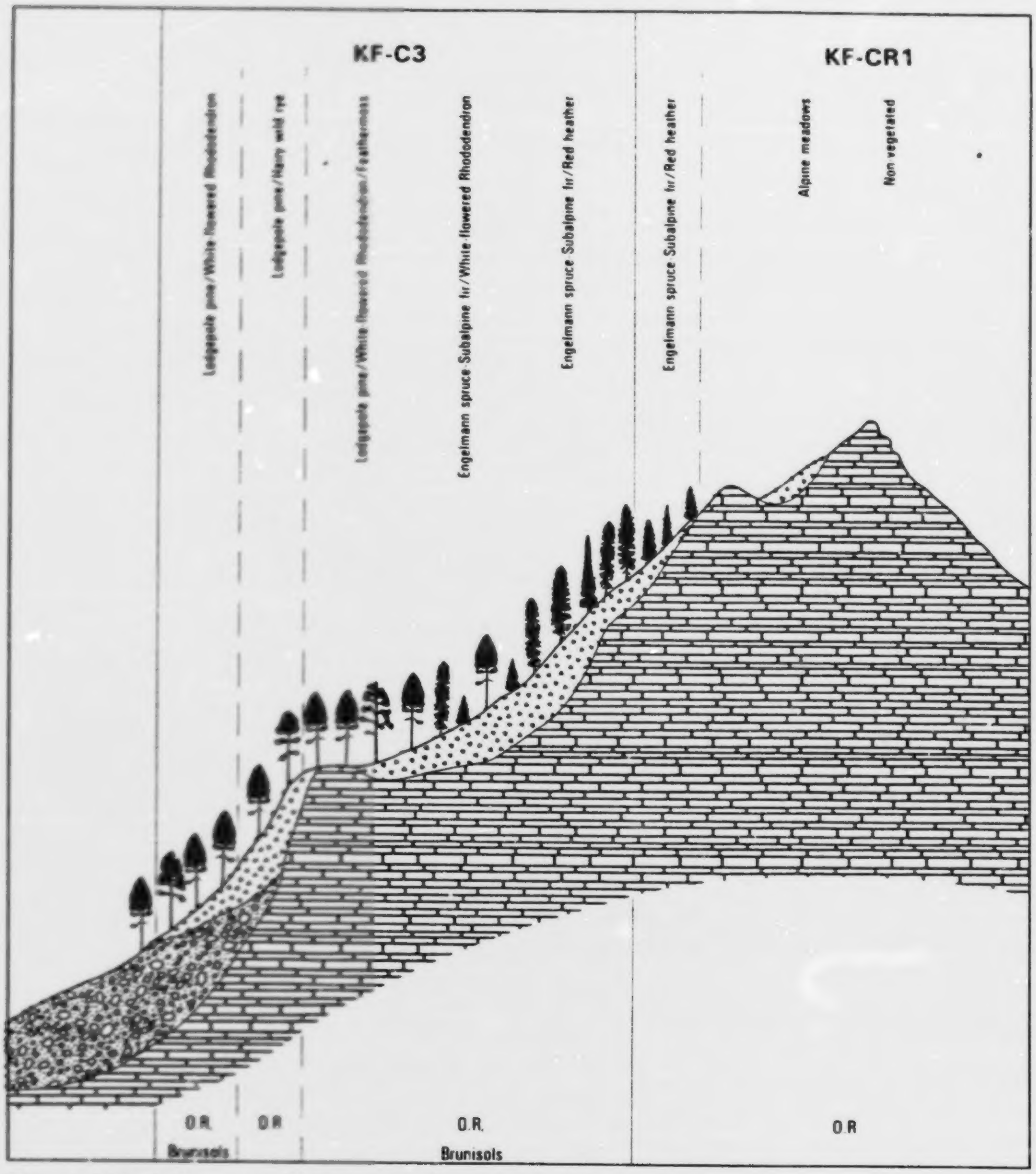

KF-C3
KF-CR1
Lodgepole pine/White flowered Rhododendron
Lodgepole pine/Hairy wild rye
Lodgepole pine/White flowered Rhododendron/Feathermoss
Engelmann spruce-Subalpine fir/White-flowered Rhododendron
Engelmann spruce-Subalpine fir/Red heather
Engelmann spruce-Subalpine fir/Red heather
Alpine meadows
Non vegetated
O.R.
Brunisols
O.R.
O.R.
Brunisols
O.R.

Figure 139: Schematic Diagram of Ecosections KF-C3 and KF-CR1

Physical Conditions:

Occupying the lower slopes of the rugged terrain centered around Caw and Nickerson Creeks, this system consists chiefly of colluvial materials of various thickness overying bedrock (Figure 140). Bedrock exposures are common on upper slopes. Thin Cordilleran till and residuum occur locally and account for approximately 25% of surficial materials. Topography across the ecosection is moderate to very strongly sloping with a dominantly inclined and ridged surface expression.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Cvb}}{\text{R}}$	rSiL-SL	16-45	1-2	O.R, Brunisols	Engelmann spruce-Subalpine fir/ White-flowered rhododendron Lodgepole pine/Hairy wild rye
$\frac{\text{Mv}}{\text{R}}$	SiL	9-30	2-3	Brunisols, BR.GL	Engelmann spruce-Subalpine fir/ White-flowered rhododendron Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/ Red heather

Ecoregion: Subalpine

Ecological Conditions

Elevations greater than 1 680 m cause Engelmann spruce-Subalpine fir forest to cover most of these slopes. Canopies tend to be open on upper slopes because of thin soils and the extreme climate. Lodgepole pine forest occurs at lower elevations but is not extensive.

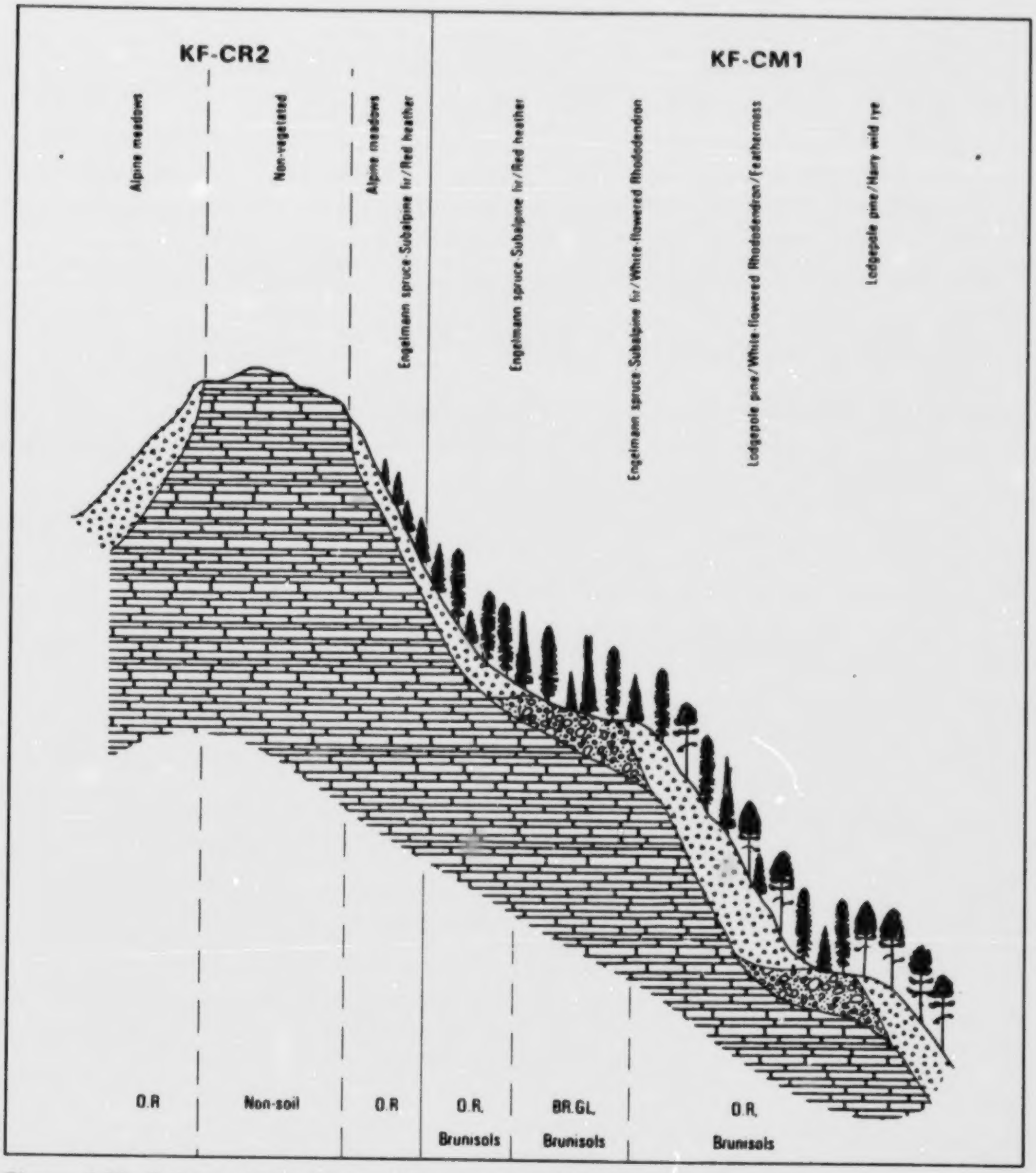

KF-CR2
KF-CM1
Alpine meadows
Non-vegetated
Alpine meadows
Engelmann spruce-Subalpine fir/Red heather
Engelmann spruce-Subalpine fir/Red heather
Engelmann spruce-Subalpine fir/White-flowered Rhododendron
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Hairy wild rye
O.R
Non-soil
O.R
O.R. Brunisols
BR.GL. Brunisols
O.R. Brunisols

Figure 140: Schematic Diagram of Ecosections KF-CM1 and KF-CR2

KF-CR1

Physical Conditions:

Centered around Torrens, Dinosaur, Horn and Coal Ridges and a large unnamed ridge complex north of the Kakwa River valley, this system consists of thin colluvial veneers over bedrock with extensive areas of bedrock outcropping (Figure 139). The topography is very rugged with surface expression generally steep, inclined and ridged. Glacially sculpted features likes cirques and aretes, and periglacial features such as stone stripes and nets are common. Slopes vary from very strong to very steep. Most of the bedrock is hard marine quartzitic sandstone which is relatively resistant to weathering, so slumping is not common.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cv}{R}$	SiLR-rCL	31-100	1-2	O.R	Engelmann spruce-Subalpine fir/Red heather
R		70-100		Non-soil	Non-vegetated

Ecoregions: Subalpine
Alpine

Ecological Conditions

This ecosection is characterized by a harsh climate and thin soils, and exposure has a major influence on the distribution of vegetation types. Engelmann spruce-Subalpine fir forest is confined to northern exposures because of later snowmelt and a more favorable soil moisture regime. Southern and neutral exposures are often non-vegetated near ridge crests, while lower slopes support alpine meadow vegetation.

KF-CR2

Physical Conditions

Occurring southeast of the Kakwa River, this system consists of thin colluvial materials overlying bedrock with extensive areas of bedrock outcrops (Figure 140). Surface expression is inclined to steep producing a less rugged and more subdued topography than in KF-CR1. Glacially sculpted features are less common. Ridges are not as prominent and peaks tend to be more rounded. Elevations across the ecosection are much lower than in KF-CR1, with the highest peak being 2 072 m in elevation.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOIL	PLANT ASSOCIATION
$\frac{Cv}{R}$	SiLr-rCL	31-70	1-2	O.R	Alpine meadows Engelmann spruce-Subalpine fir/ Red heather
R		46-70		Non-soil	Non-vegetated

Ecoregion: Alpine
Subalpine

Ecological Conditions

Alpine meadows occur over most of this ecosection, with bare rock outcrops found near ridge crests. Despite less rugged topography and lower elevations than KF-CR1 forest development is more restricted, with open Engelmann spruce-Subalpine fir stands occurring spottily in subdued headwater valleys.

KF-M1

Physical Conditions

This system occurs within the Kakwa River valley and parallels the Park Ranges subregion (Figure 138). It also occur on the upland area east of the South Kakwa River and extends eastward to Copton and Horn Creeks. Thick morainal deposits of local origin are the principal surficial materials across most of the ecosection. Organic accumulations of sphagnum peat occur in minor glacial meltwater channels and account for approximately 10% of all surficial materials. Fluvial veneers derived from slope wash commonly overlie morainal deposits adjacent to steep slopes (PR-C1, KF-C1). Surface expression varies from level and undulating to ridged and steep with rolling to inclined surface expressions dominating. Slopes vary from nearly level to strong.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mb}}{\text{R}}$	rL-gSL	2-30	2-3	Brunisols, BR.GL	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron
$\frac{\text{Ov}}{\text{R}}$	Mesic-Fibric	0-2	5-6	Peaty Gleysols, Fibrisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

The presence of glacial meltwater channels and bedrock ridges creates extreme variation in drainage condition which is reflected in the vegetation pattern. Ridges and slopes are forested with lodgepole pine on relatively level sites and ridge tops, and Engelmann spruce-Subalpine fir on sloping terrain. This segregation may reflect differences in soil depth, with pine stands occurring on thinner soils. Poorly drained meltwater channels and low-lying areas between ridges support dwarf birch shrublands.

KF-M2

Physical Conditions

This bedrock controlled system is located immediately adjacent to Falls and Nickerson Creeks and is an undulating bench separating steeper upper and lower slopes (Figure 141). Cordilleran till overlies bedrock of the Shaftsbury Formation. Fluvial veneers derived from slope wash commonly overlie morainal deposits and thin organic deposits are common between ridges.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	SiL-SiCL	2-30	2-3	E.DYB, BR.GL	Lodgepole pine/White-flowered rhododendron Feathermoss
			5	Peaty Gleysols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forests predominate on well-drained ridges with deciduous shrublands found in poorly drained tributary valley bottoms.

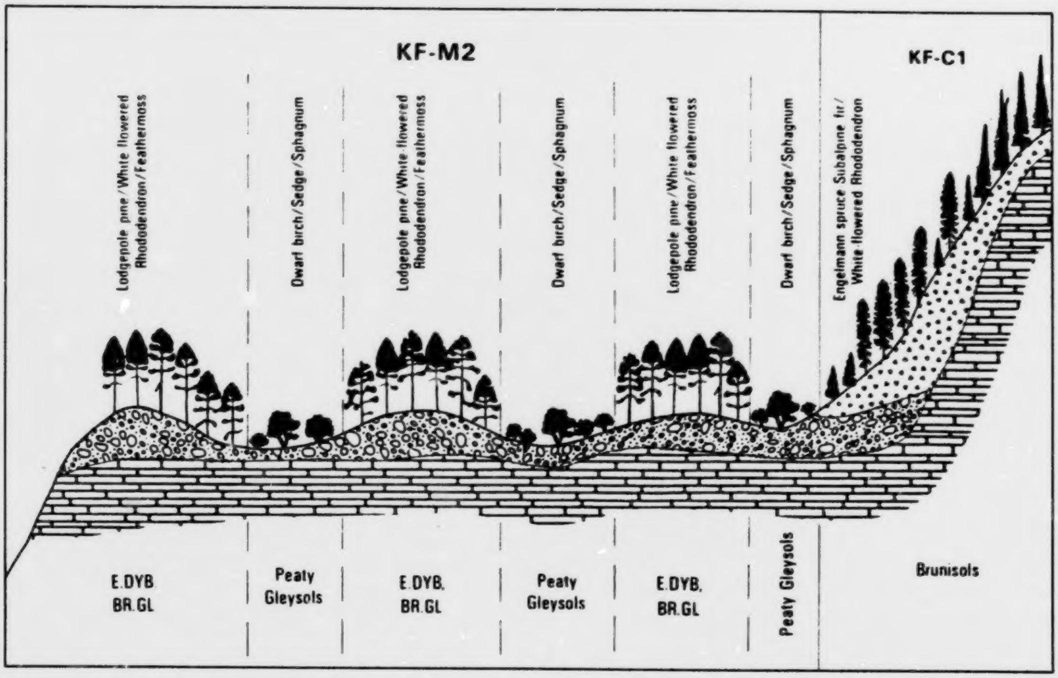

KF-M2
KF-C1
Lodgepole pine/White flowered Rhododendron/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White flowered Rhododendron/Feathermoss
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White flowered Rhododendron/Feathermoss
Dwarf birch/Sedge/Sphagnum
Engelmann spruce Subalpine fir/White flowered Rhododendron
E.DYB BR.GL
Peaty Gleysols
E.DYB. BR.GL
Peaty Gleysols
E.DYB. BR.GL
Peaty Gleysols
Brunisols

Figure 141: Schematic Diagram of Ecosection KF-M2

KF-M3

Physical Conditions

This system includes the lower valley slopes of the Torrens and South Torrens Rivers and Stinking, Mouse Cache and Lick Creeks (Figure 142). Surficial materials include Cordilleran tills overlying bedrock with a substantial amount of residuum occurring where bedrock is close to the surface. Wet and dry meadows occur adjacent to Mouse Cache Creek. Surface expression is dominantly inclined to rolling with slopes ranging from moderate to very strong.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mvb}}{\text{R}}$	rL-rSL	10-45	2-3	Brunisols, BR.GL	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/ Feathermoss

Ecoregion: Subalpine

Ecological Conditions

Exposure and soil depth influence forest composition in this ecosection. Lodgepole pine occurs on ridge tops and south-facing slopes, while Engelmann spruce-Subalpine fir forest is found on northern exposures. Wet and dry meadows are intermixed with open pine stands on gentle slopes adjacent to Mouse Cache Creek. The lack of continuous forest cover is probably a reflection of coarse surficial deposits derived from slope wash.

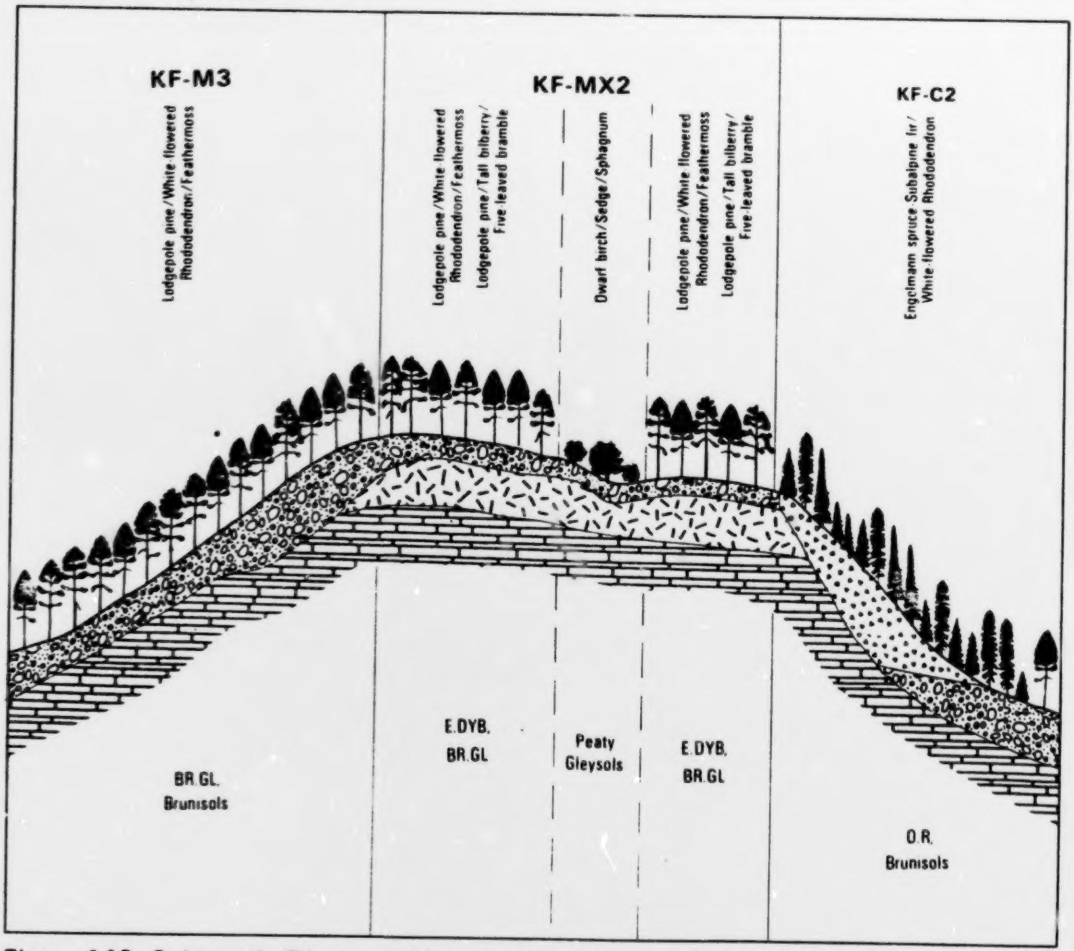

KF-M3
Lodgepole pine/White-flowered Rhododendron/Feathermoss
KF-MX2
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/ Five-leaved bramble
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Tall bilberry/ Five-leaved bramble
KF-C2
Engelmann spruce-Subalpine fir/ White-flowered Rhododendron
BR.GL. Brunisols
E.DYB. BR.GL
Peaty Gleysols
E.DYB. BR.GL
O.R. Brunisols

Figure 142: Schematic Diagram of Ecosections KF-M3 and KF-MX2

Physical Conditions

This system is a subdued ridge with adjacent slopes, located between Lynx Creek and the Kakwa River (Figure 143). Cordilleran till covers most of the system, with residual materials exposed on ridge tops. A few organic deposits are found in groundwater discharge areas between ridges. Slopes vary from moderate to very strong.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	rL-gSL	16-45	2-3	Brunisols, BR.GL	Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/White-flowered rhododendron
$\frac{Xvb}{R}$	rL-gSL	9-30	2-3	Brunisols	Lodgepole pine/Hairy wild rye Lodgepole pine/White-flowered rhododendron
$\frac{Ov}{M}$	$\frac{Mesic}{rL}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine

Ecological Conditions

Extreme variation in drainage on this ridged topography creates the vegetation pattern. Well-drained uplands are forested with lodgepole pine predominating on ridge tops, southern and neutral exposures, while Engelmann spruce-Subalpine fir is found on lower valley sides and northern exposures. Dwarf birch shrublands are found on poorly drained low-lying areas between ridges.

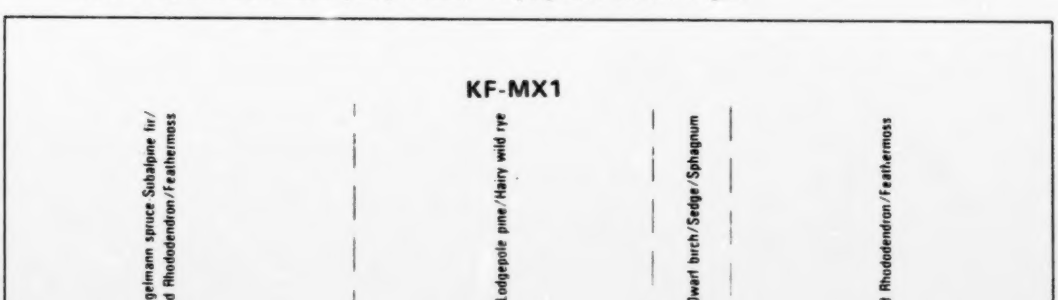

KF-MX1
Engelmann spruce-Subalpine fir/White-flowered Rhododendron/Feathermoss
Lodgepole pine/Hairy wild rye
Dwarf birch/Sedge/Sphagnum
Lodgepole pine/White-flowered Rhododendron/Feathermoss
BR.
BR.GL
BR.
BR.GL
Peaty
Gleysols
BR.
BR.GL

Figure 143: Schematic Diagram of Ecosection KF-MX1

KF-MX2

Physical Conditions

This gently undulating to rolling upland plateau located east of Sherman Meadows and north of Stetson Creek consists of residual sandstone material overlain by a thin continuous veneer of Cordilleran till (Figure 142). Thicker morainal deposits and organic accumulations occur locally. Slopes vary from gentle to strong.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Mv}}{\text{X}}$	rL-gSiL	6-30	2-3	E.DYB, BR.GL	Lodgepole pine/White-flowered rhododendron Feathermoss Lodgepole pine/Tall bilberry/Five-leaved bramble Engelmann spruce-Subalpine fir/Feathermoss

Ecoregion: Subalpine

Ecological Conditions

Lodgepole pine forest covers most of this ecosection, with variation in soil thickness causing the tree canopy to vary from open on ridge tops to closed on side slopes. Small amounts of Engelmann spruce-Subalpine fir forest are found on lower slopes of tributary valleys.

2.3.4 Smoky Valley Subregion (Ecodistrict)

Located in the extreme southern portion of the study area (Figure 144), this rugged upland is traversed by the deeply incised Smoky River valley. Erosion by the Smoky River and its tributaries has created a series of northeast trending ridges as opposed to northwest trending ridges which are found elsewhere within the Rocky Mountain Foothills region. The subregion is underlain by Lower to Upper Cretaceous bedrock which has not been as distorted by folding and faulting as other subregions found within the Foothills region. Relief is not as extreme, with elevations ranging from 885 m within the Smoky River valley to 1 850 m atop Cutpick Hill.

Surficial deposits within the subregion have been heavily influenced by post-glacial erosion. Hence, colluvium and residual materials are very dominant. Minor amounts of both Continental and Cordilleran till can be found on some uplands and lower slope positions where erosion has not been intense. Within the major stream valleys, glaciofluvial sands and gravels are very prominent as valley trains and terraces.

The Smoky Valley subregion comes under the influence of the Boreal Uplands, Subalpine and a variant of the Montane ecoregions. Within the river valley the combined influence of chinook winds, steep slopes and exposure have produced a dry environment allowing aspen forests and grasslands to co-exist. Elsewhere, on uplands and higher ridges, closed lodgepole pine forests with varying understories can be found. White or Engelmann spruce is found locally on northern exposures.

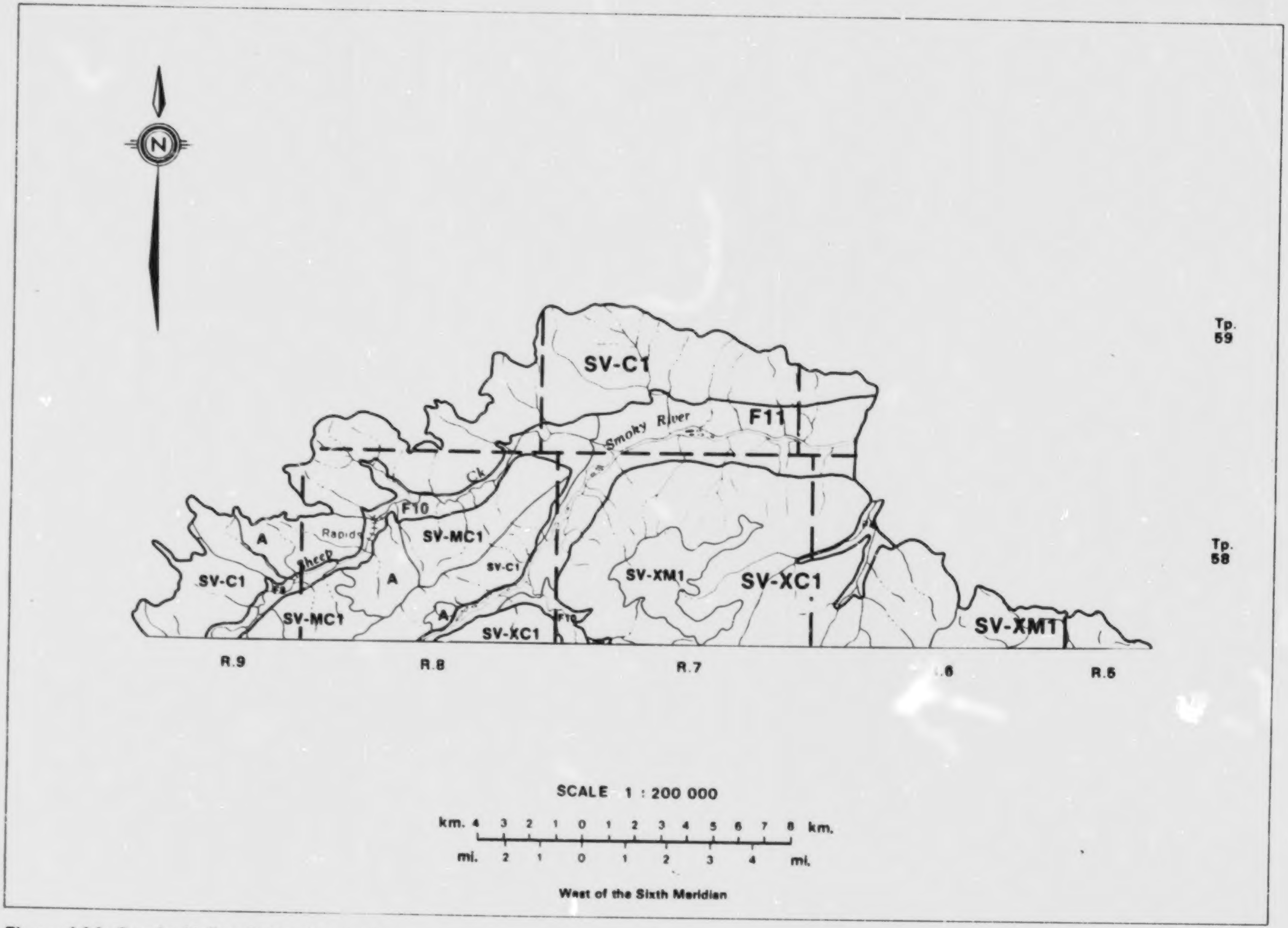

N
Tp. 59
Tp. 58
SV-C1
F11
Smoky River
Ck
F10
Rapids
Sheep
A
SV-C1
F8
SV-MC1
SV-MC1
sv-c1
A
A
SV-XC1
F10
SV-XM1
SV-XC1
SV-XM1
R.9
R.8
R.7
.6
R.5
SCALE 1 : 200 000
km. 4 3 2 1 0 1 2 3 4 5 6 7 8 km.
mi. 2 1 0 1 2 3 4 mi.
West of the Sixth Meridian

Figure 144: Smoky Valley Subregion (SV)

The subregion is divided into five ecosections/systems (Table 27) which are described in more detail in the following sections.

The Smoky Valley subregion was identified as having four distinct fluvial systems (F8, F10, F11, F14). They are discussed in detail in Section 2.5 of Volume I of this report.

Table 27

SUMMARY OF ECOSECTIONS IN THE SMOKY VALLEY SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
SV-C1	Inclined to steep valley walls	Thin, medium-textured colluvium	Aspen forest, grassland and lodgepole pine forest
SV-MC1	Nearly level to rolling plateau	Moderately coarse-textured till overlain by silt	Lodgepole pine and white spruce forest
SV-XC1	Ridged and gullied upper slopes	Thin, medium-textured residual materials and colluvium	Aspen forest, grassland and lodgepole pine forest
SV-XM1	Rolling plateau remnant	Thin, moderately fine-textured residual materials and till	Lodgepole pine and black spruce-lodgepole pine forest, dwarf birch shrubland

SV-C1

Physical Conditions:

This system is made up of the moderately to steeply sloping south-facing valley walls of Sheep Creek and the Smoky River (Figure 145). Colluvium derived from till and weathered bedrock is the dominant surficial material. Gullying and slumping are common throughout the system, and bedrock is exposed on upper slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cvb}{R}$	rSiL	16-45	2-3	Brunisols, O.R	Aspen/Rose/Hairy wild rye
		45-100	1-2	O.R	Lodgepole pine/Aspen/Bearberry Grasslands

Ecoregion: Montane Variant

Ecological Conditions

Dry conditions caused by steep southern exposures and high winds in the Smoky River Valley cause small stands of aspen and grasslands dominated by june grass, wheat grass and sage to cover most of this ecosection. Lodgepole pine stands are rare and confined to gully bottoms and lower slopes.

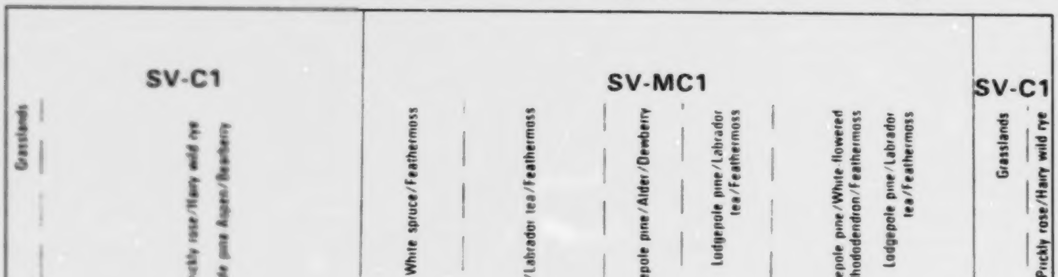

SV-C1
SV-MC1
SV-C1
Grasslands
Aspen/Prickly rose/Hairy wild rye
Lodgepole pine Aspen/Bearberry
White spruce/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/Alder/Dewberry
Lodgepole pine/Labrador tea/Feathermoss
Lodgepole pine/White flowered Rhododendron/Feathermoss
Lodgepole pine/Labrador tea/Feathermoss
Grasslands
Aspen/Prickly rose/Hairy wild rye
O.R
O.R
Brunisols
GLE DYB
Gleysols
E DYB
BR GL
GLBR GL
E DYB
E DYB
BR GL
O.R
O.R. Brunisols

Figure 145: Schematic Diagram of Ecosections SV-C1 and SV-MC1

SV-MC1

Physical Conditions:

Situated between the Smoky River and Sheep Creek this plateau remnant has surface expressions that vary from nearly level and subdued on upland areas to inclined and rolling on northwest facing side slopes (Figure 145). Slopes range from nearly level to very strong. On upland areas thin veneers of Cordilleran till are overlain by silty eolian veneers. A complex of colluvial and morainal materials occurs on side slopes, with morainal deposits being confined to less steep topography. Colluvial materials are derived from tills and disintegrated sandstones, siltstones and shales. A large portion of this ecosection is being mined for coal which occurs in the Luscar Formation.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
Ev/M	SL/SiCL	0-9	1-2	E.DYB, BR.GL	Lodgepole pine/Labrador tea/ Feathermoss
Mv/R	SL-SiCL	9-30	2-4	BR.GL, GLBR.GL	Lodgepole pine/Labrador tea/ Feathermoss Lodgepole pine/Alder/Dewberry
Cv/R	SL	16-45	1-3	E.DYB	Lodgepole pine/Labrador tea/ Feathermoss
			4-5	GLE.DYB, Gleysols	White spruce/Feathermoss

Ecoregion: Boreal Uplands

Ecological Conditions

Most of this ecosection is covered by lodgepole pine forest, with dry conditions due to silt deposits causing an open canopy at high elevations. White spruce forest occurs on the lower slopes and floors on tributary valleys.

SV-XC1

Physical Conditions

Lying immediately south and east of the Smoky River and extending eastward to Wanyandie Creek, this system (Figure 146) consists of a complex association of residuum and colluvial materials derived from thin, moderately coarse to medium-textured tills and weathered sandstones and siltstones. Surface expression is inclined to ridged and gullied with slopes ranging from strong to extremely sloping.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{\text{Xvb}}{\text{R}}$	SL-SiCL	16-45	2-3	BR.GL, Brunisols	Lodgepole pine/Labrador tea/Tall bilberry/Lodgepole pine/Alder/Dewberry Grasslands
$\frac{\text{Cvb}}{\text{R}}$	rSiL-SiCL	30-70	1-3	E.DYB, E.EB	Aspen/Rose/Hairy wild rye Lodgepole pine/Aspen/Bearberry White spruce/Feathermoss

Ecoregion: Montane Variant
Boreal Uplands

Ecological Conditions

Aspect and elevation are the major influences on vegetation distribution. Aspen forest occurs on lower slopes and steep southern and western exposures; grassland and aspen stands are mixed on the steepest slopes. Lodgepole pine forest is found on upper slopes, with white spruce stands in the bottoms of tributary valleys.

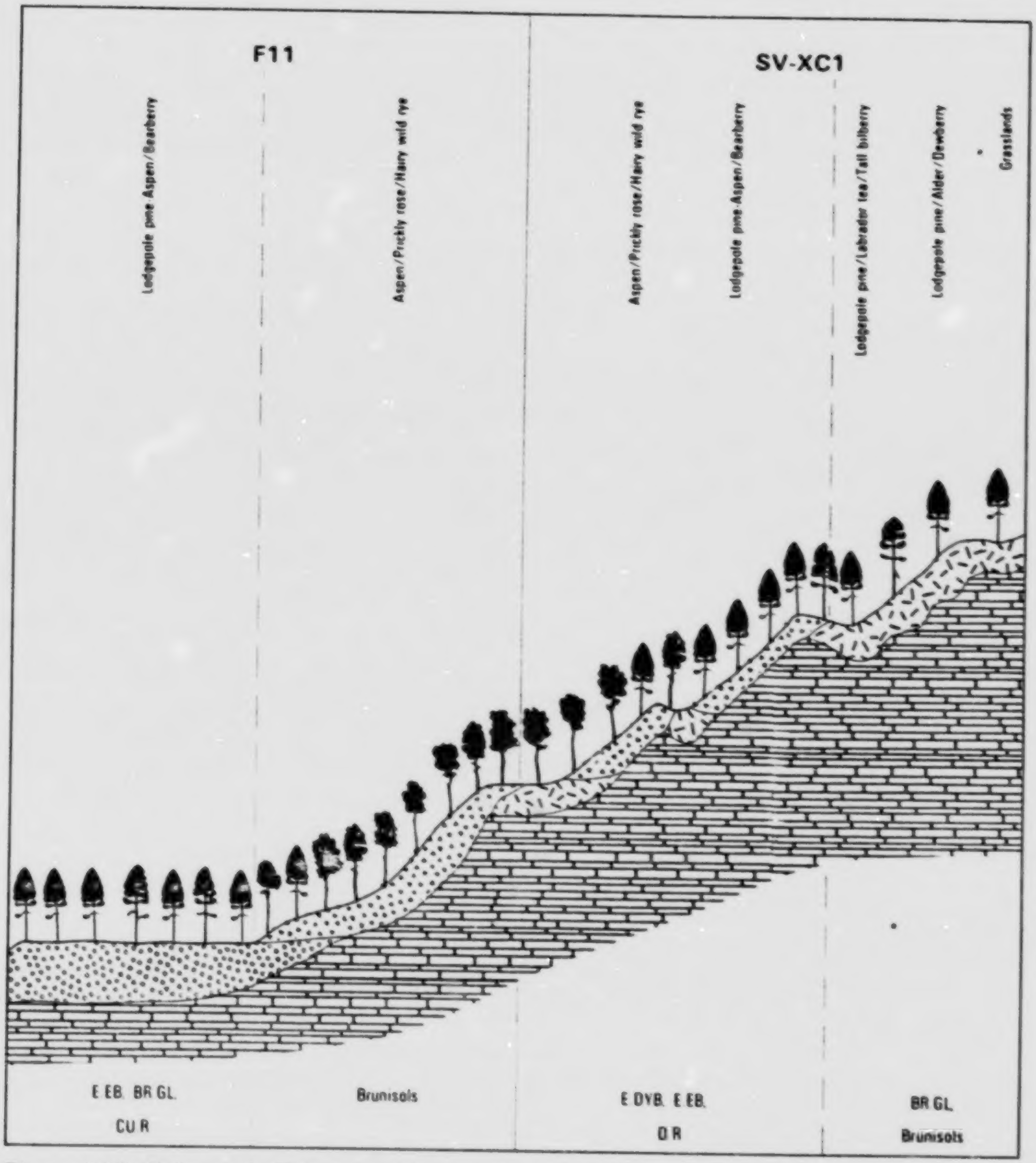

F11
SV-XC1
Lodgepole pine-Aspen/Bearberry
Aspen/Prickly rose/Hairy wild rye
Aspen/Prickly rose/Hairy wild rye
Lodgepole pine-Aspen/Bearberry
Lodgepole pine/Labrador tea/Tall bilberry
Lodgepole pine/Alder/Dewberry
Grasslands
E EB. BR GL.
CU R
Brunisols
E DYB. E EB.
O R
BR GL.
Brunisols

Figure 146: Schematic Diagram of Ecosections SV-XC1 and F11

SV-XM1

Physical Conditions:

Located on the south side of the Smoky River valley and the headwaters of Norris Creek, this plateau remnant (Figure 147) has been extensively dissected by numerous headwater tributary streams resulting in extensive slumping and gullying. Surficial materials consist chiefly of residuum and till deposits of variable thickness overlying subdued to moderately rolling bedrock. Till deposits are generally thin and are comprised of a mixture of both Cordilleran and Continental tills. Small organic accumulations occur locally.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Xb}{R}$, $\frac{Mvb}{R}$	rSiL-SiCL	2-15	2-4	O.GL, BR.GL, GLBR.GL	Lodgepole pine/Tall bilberry/Five-leaved bramble Lodgepole pine/White-flowered rhododendron/Feathermoss Black spruce-Lodgepole pine/Tall bilberry
$\frac{Ov}{M}$	$\frac{Mesic}{SiCL}$	0-2	5-6	Peaty Gleysols, Mesisols	Dwarf birch/Sedge/Sphagnum

Ecoregion: Subalpine
Boreal Uplands

Ecological Conditions

Local variation in drainage and topography creates the vegetation pattern, with lodgepole pine forest predominating over most of the ecosection; many of these pine stands are in a seral stage because of fires. Nearly level plateau remnants tend to be imperfectly drained and are characterized by black spruce-lodgepole pine forest with dwarf birch shrublands in small depressions.

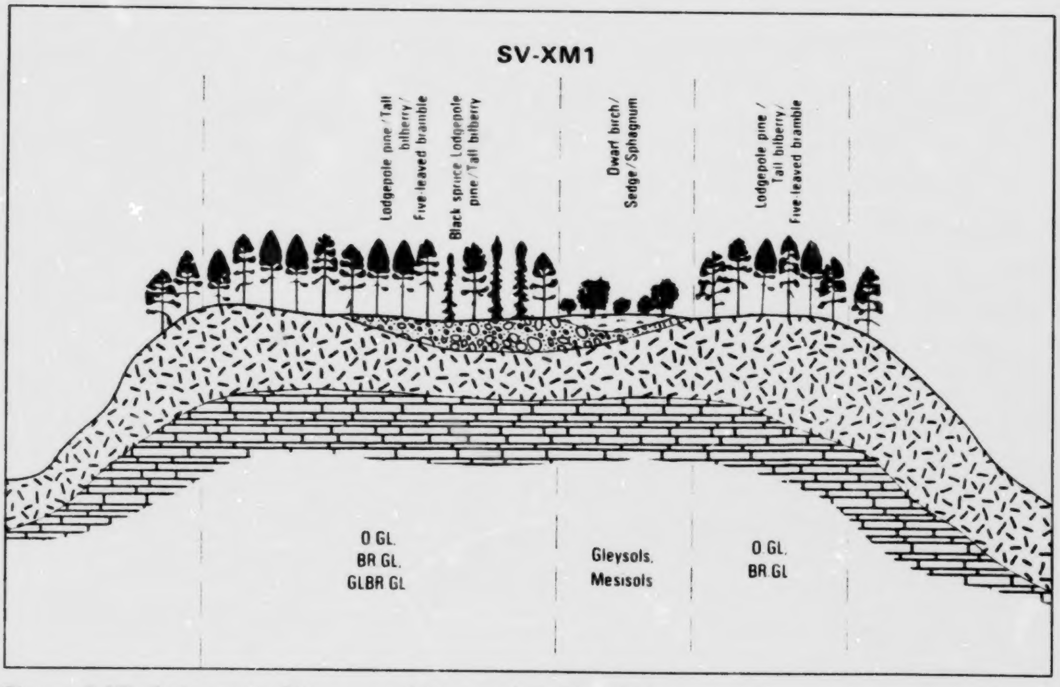

SV-XM1
Lodgepole pine/Tall bilberry/
Five-leaved bramble
Black spruce-Lodgepole pine/Tall bilberry
Dwarf birch/
Sedge/Sphagnum
Lodgepole pine /
Tall bilberry/
Five-leaved bramble
O GL.
BR GL.
GLBR GL
Gleysols.
Mesisols
O GL.
BR GL

Figure 147: Schematic Diagram of Ecosection SV-XM1

2.4 The Rocky Mountain Region

The Rocky Mountains Region occurs in a very small portion of the study area (Figure 7). Hence, detailed information on the region will be discussed briefly within the subregion portion of the report.

2.4.1 The Park Ranges Subregion (Ecodistrict)

Only one subregion is located within that portion of the Rocky Mountain Region found within the study area (Figure 148). The subregion is centered around four mountain peaks, Kakwa Mountain (2 295 m), Mount May (2 449 m), La Creche Mountain (2 362 m) and one unnamed peak (2 184 m). The underlying strata are of Mesozoic age with the sandstones, siltstone and shales of the Nikanassin Formation and Fernie Group being dominant. Limestone of the Whitehourse Formation is present but its extent is limited.

The bedrock strata found within the Park Ranges subregion are very thick and have not been as extensively folded as strata found to the south of the study area within the main ranges of the Rocky Mountains. The folding and thrust faulting of the soft Mesozoic rocks has produced several sub-parallel ranges and valleys which are characterized by rapid horizontal and vertical variations in bedrock lithology. The streams which drain this subregion tend to flow across the northwesterly structural trend of the bedrock and expose strata of different lithologies.

Landforms within the subregion are the result of alpine glaciation which has created U-shaped valleys, cirques and aretes. Surficial

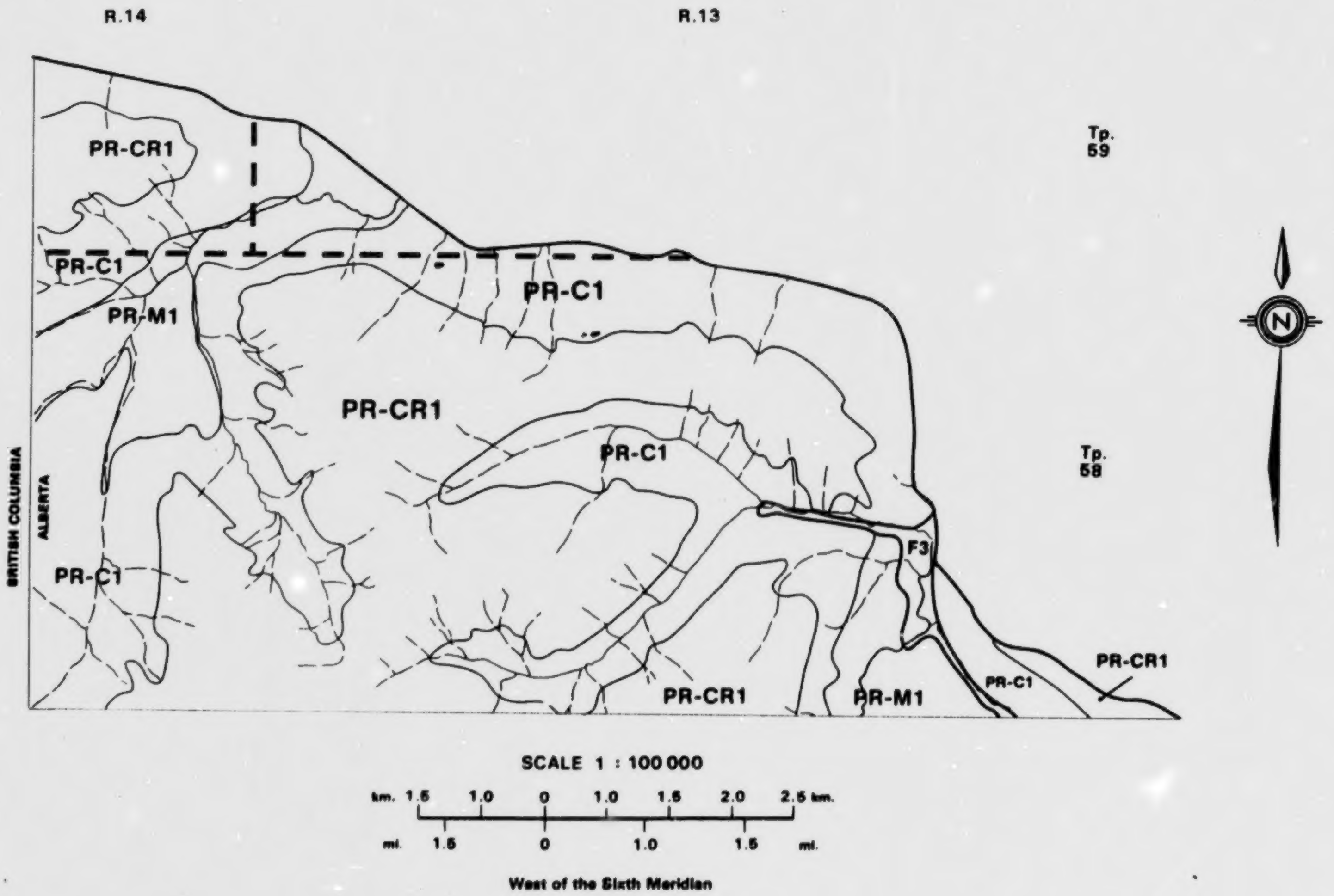

R.14
R.13
Tp. 59
Tp. 58
PR-CR1
PR-C1
PR-M1
PR-C1
PR-CR1
PR-C1
BRITISH COLUMBIA
ALBERTA
PR-C1
F3
PR-CR1
PR-C1
PR-CR1
PR-M1
SCALE 1 : 100 000
km. 1.5 1.0 0 1.0 1.5 2.0 2.5 km.
mi. 1.5 0 1.0 1.5 mi.
West of the Sixth Meridian

Figure 148: Park Ranges Subregion (PR)

deposits across much of the subregion consists of colluvium and extensive areas of exposed bedrock. Minor deposits of moraine, residuum and recent fluvial materials are also prominent.

Within the Park Ranges both the Subalpine and Alpine ecoregions occur, the latter found on mountain tops devoid of treed vegetation. Areas of krummholtz vegetation (Engelmann spruce-Subalpine fir) generally mark the transition between the two ecoregions. The Alpine ecoregion supports a variety of alpine species including white mountain heather, mosses, willow and lichen. Below treeline, climax Engelmann spruce-Subalpine fir forest have developed. Within the major valleys where slopes are more moderate mature seral lodgepole pine forests occur.

The subregion is divided into three ecosection/systems (Table 28). Detailed descriptions with accompanying schematic diagrams follows.

The Park Ranges contain only one fluvial system (F3) of note. It is described in detail in Secton 2.5 of Volume I.

Table 28

SUMMARY OF ECOSECTIONS IN THE PARK RANGES SUBREGION

ECOSECTION	LANDFORM AND TOPOGRAPHY	PARENT MATERIALS	VEGETATION
PR-C1	Moderate to steep slopes below treeline	Thin rubbly colluvium and exposed bedrock	Engelmann spruce-Subalpine fir forest
PR-CR1	Steeply sloping mountain tops above treeline	Exposed bedrock and thin rubbly colluvium	Alpine meadows
PR-M1	Rolling to strongly sloping lower slopes	Thin rubbly, moderately fine-textured till	Engelmann spruce-Subalpine fir and Lodgepole pine forest

PR-C1

Physical Conditions

Located below the treeline, this system consists of colluvial materials of variable thickness overlying moderate to extremely sloping bedrock (Figure 149). Surficial materials consist of unconsolidated weathered bedrock and colluviating till deposits on lower slope positions. Rock outcrops are very common on steep upper slopes while small colluvial fans occur on lower slope positions where extensive avalanching has occurred.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Cvb}{R}$	rL	10-70	1-4	O.R, O.EB, O.DYB, E.DYB, GLE.DYB	Engelmann spruce-Subalpine fir/ White-flowered rhododendron Engelmann spruce-Subalpine fir/Red heather

Ecoregion: Subalpine

Ecological Conditions

Continuous cover of Engelmann spruce-Subalpine fir forest on lower slopes is broken only by avalanche tracks which support seral shrubland communities. At higher elevations there is a transition from closed canopy forest to open canopy krummholtz vegetation.

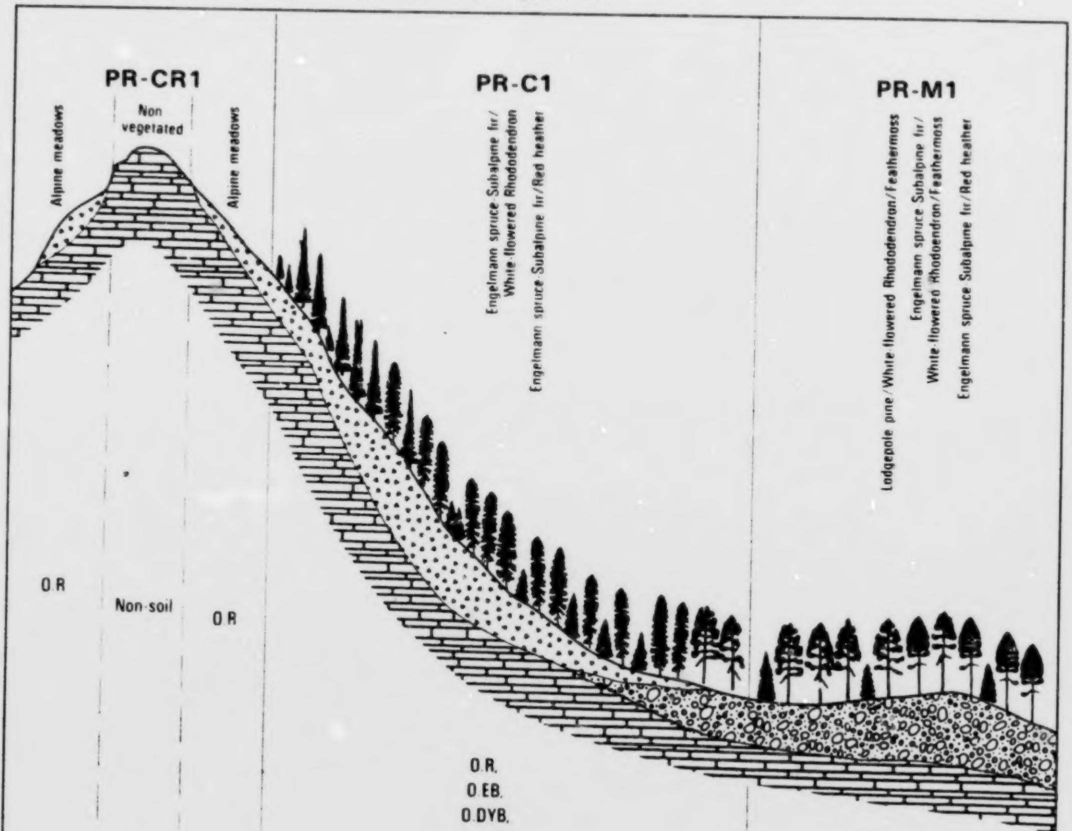

PR-CR1
Alpine meadows
Non vegetated
Alpine meadows
PR-C1
Engelmann spruce-Subalpine fir/ White-flowered Rhododendron
Engelmann spruce-Subalpine fir/Red heather
PR-M1
Lodgepole pine/White-flowered Rhododendron/Feathermoss
Engelmann spruce-Subalpine fir/ White-flowered Rhododendron/Feathermoss
Engelmann spruce-Subalpine fir/Red heather
O.R
Non-soil
O.R
O.R.
O.EB.
O.DYB.
E.DYB.
E.DYB.
E.EB.

Figure 149: Schematic Diagram of Ecosections PR-C1, PR-CR1 and PR-M1

PR-CR1

Physical Conditions

This system is centered around four mountain peaks, Kakwa Mountain (2 295 m), Mount May (2 449 m), La Creche Mountain (2 362 m) and one unnamed (2 184 m) (Figure 149). The area consists of steep bedrock ridges covered with thin colluvial materials. Glacially sculptured features such as cirques, aretes and peaks are very prominent in this landscape, and preglacial frost features including stone stripes, stone nets and boulder fields are common on lower slopes. Several rock glaciers have developed within a cirque on the northeast face of Mt. May.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
R		71-100		Non-soil	Non-vegetated
$\frac{Cv}{R}$	rL	31-100	1-2	O.R	Alpine meadows

Ecoregion: Alpine

Ecological Conditions

Exposure and variation in the depth of surficial materials influence the vegetation pattern above tree line. South-facing slopes, which tend to be steeper than other exposures, support alpine herbland with large areas that are non-vegetated. Greater accumulation and later retention of snow on northern exposures creates a more favorable moisture regime, and these slopes support dwarf shrublands and open krummholz. Sedge meadows occur locally on poorly drained level terrain such as the floor of cirques.

PR-M1

Physical Conditions

This system occurs in valley bottoms adjacent to Francis Peak Creek and the South Kakwa River (Figure 149). The landscape is characterized by moderate to strong slopes and rolling to inclined surfaces with a northeast aspect. Surficial materials are dominantly Cordilleran tills intermixed with residuum where till deposits are very thin. Thin veneers of fluvial and colluvial materials may be present in areas adjacent to steeper slopes.

MATERIALS	TEXTURE	SLOPE	DRAINAGE	SOILS	PLANT ASSOCIATION
$\frac{Mvb}{R}$	r-SiCL	10-30	2-3	E.DYB, E.EB	Engelmann spruce-Subalpine fir/ White-flowered rhododendron Lodgepole pine/White-flowered rhododendron Engelmann spruce-Subalpine fir/ Red heather

Ecoregion: Subalpine

Ecological Conditions

Engelmann spruce-Subalpine fir covers most of these predominantly north-facing slopes. Lodgepole pine is less common, and is found mainly on southern exposures of small ridges. Large areas that have been burned are regenerating to lodgepole pine forest; regeneration is slow on steep slopes because the soil is very thin.

2.5 Fluvial Systems

Within this study, the valleys of major streams and rivers have been classified separately from the rest of the landscape. This system of classification reflects the fact that these valleys are more similar to each other than they are to the uplands they cross, primarily due to the dominant influence of erosional and depositional processes that are at work within these systems.

On the 1:50 000 scale Physical Land Classification maps which accompany the report, the landforms associated with fluvial systems have been mapped in accordance with Physical Land Classification Methodology (see Section 3). On the 1:100 000 scale Ecological Land Classification maps, a separate criteria was used to differentiate the various fluvial systems which occurred within the study area. The following parameters were used to separate and describe the individual fluvial systems; i.e. Fluvial System (X).

Stream Order	Refers to 4 classes: a) 1°-3° headwater tributaries b) 3°-4° lower tributaries c) 4°-5° middle reaches of major rivers d) 6° lower reaches of major rivers
Valley Form	Types of valleys (broad glacial, broad U-shaped, broad V-shaped with terraces, numerous V-shaped, etc.).
Floodplain	Types of floodplains (continuous broad, continuous narrow, discontinuous, absent, etc.)

Channel Form	Types of channels (sinuous, bedrock controlled, braided, meandering, etc.).
Channel Slope	Percent grade from topographic maps.

Valley and floodplain surficial materials and vegetation are also described for each fluvial system.

Flooding response was rated as fast, moderate or slow based on the following criteria:

- size of the watershed
- prevailing slope classes in watershed
- depth and texture of surficial materials

Channel stability was also rated as high, moderate or low based on:

- presence of braided reaches
- evidence of channel migration (oxbows, meander scars, scroll marks, etc.)
- occurrence of erosional scarps on banks

A more detailed description of the above factors can be found in Appendix A.

FLUVIAL SYSTEM - F1

This system is located upstream from Kakwa Falls on the Kakwa River.

STREAM ORDER : 3°

VALLEY FORM : Wide, gently sloping valley

VALLEY MATERIALS : Thin Cordilleran till over bedrock

CHANNEL FORM : Stable, continuous narrow floodplain with point bars present

CHANNEL GRADE : 0.5%

FLUVIAL MATERIALS: Fine to coarse gravels

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Orthic Regosols (25-50%)

VEGETATION

Valley Floor: Deciduous shrublands and lodgepole pine groves

Valley Sides: Closed lodgepole pine forest

NOTES : Confinement by bedrock creates stable stream course.

Thin coarse-textured soils cause rapid storm response.

FLUVIAL SYSTEM - F2

This system is located between Kakwa Falls and the confluence of Mouse Cache Creek with the Kakwa River.

STREAM ORDER : 3°

VALLEY FORM : This is a deep, steep-sided canyon (90% slopes, 30 m deep).

VALLEY MATERIALS : Exposed bedrock including resistant conglomerate beds of the Cadomin Formation.

CHANNEL FORM : Channel is restricted by bedrock sidewalls and is extremely stable.

CHANNEL GRADE : 2%

FLUVIAL MATERIALS: Gravel and boulders

SOILS : Well drained Cumulic and Orthic Regosols

VEGETATION

Valley Floor: White spruce and lodgepole pine forest

Valley Sides: Non-vegetated

NOTES : Thin, coarse-textured soils in watershed create rapid storm response

FLUVIAL SYSTEM - F3

This system includes a portion of the Kakwa River and its tributaries from its confluence with Mouse Cache Creek to 10 km northeast of its confluence with the South Kakwa River, as well as the middle and upper reaches of the South Kakwa River and the upper reaches of the Narraway River.

STREAM ORDER : 1°-3°, 4° downstream from confluence of Kakwa and South Kakwa Rivers.

VALLEY FORM : Broad glacially-carved valley with very strongly sloping valley walls adjacent to stream. This also includes intermittent tributaries in deep steep-sided valleys.

VALLEY MATERIALS : Cordilleran till

CHANNEL FORM : Broad continuous floodplain with a braided to meandering stream course.

CHANNEL GRADE : 0.5-0.75% on main river. 5-8% on tributaries.

FLUVIAL MATERIALS: Mixture of fluvial sands and gravels.

SOILS : Well-drained Cumulic Regosols (25-50%); imperfectly-drained Orthic Regosols (25-50%); poorly-drained Gleysols and Mesisols (25-50%).

VEGETATION

Valley Floor: White spruce and lodgepole pine forests, dry-meadows-fluvial.

Valley Sides: Lodgepole pine/Hairy wild rye on south exposures with White spruce/Feathermoss on other exposures.

NOTES : Braided and meandering reaches indicate relatively low stability of stream course.

Coarse-textured, thin soils on upper slopes and deep, compact soils on lower slopes cause a rapid to moderate storm response.

FLUVIAL SYSTEM - F4

This system includes Falls Creek and lower reaches of South Kakwa River, middle reaches of Copton Creek and lower reaches of Caw Creek, lower reaches of the Torrens River and Stetson Creek, Nickerson and Horn Creek, upper Narraway River including Dinosaur, Flume Creeks and Goat Creeks. These streams are located in the mountain or foothills portion of the study area.

STREAM ORDER : 1°-3°, 4° on middle reaches of Copton Creek.

VALLEY FORM : Steep sided, V-shaped valleys.

VALLEY MATERIALS : Colluvium with slumping pronounced along the South Kakwa River where intermittent streams join the river as well as on Goat and Dinosaur Creeks. Bedrock exposures are common.

CHANNEL FORM : Highly stable stream course confined by bedrock of valley walls. The streams are downcutting and there is no floodplain.

CHANNEL GRADE : 2-6%

FLUVIAL MATERIALS: Fine to coarse gravels

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Orthic Regosols (25-50%); poorly-drained Gleysols (10-25%).

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Lodgepole pine and spruce forests with grasslands on steep valley walls.

NOTES : Confinement by bedrock creates relatively stable stream courses.

Thin coarse-textured soils cause a rapid storm response.

FLUVIAL SYSTEM - F5

This system includes Francis Peak Creek, Lick Creek, Putzy Creek and the upper reaches of Copton Creek.

STREAM ORDER : 1°-2°

VALLEY FORM : Steep-sided V-shaped valleys

VALLEY MATERIALS : Mixture of till and colluvium

CHANNEL FORM : Fairly stable banks with channel being restricted by valley walls but not to same extent as F2. The streams are downcutting and have no floodplain.

CHANNEL GRADE : 2-3.5%

FLUVIAL MATERIALS: Fine to coarse gravels

SOILS : Well-drained Orthic Regosols (50-75%); imperfectly-drained Cumulic Regosols (25-50%).

VEGETATION

Valley Floor: White x Engelmann spruce forest

Valley Sides: White x Engelmann spruce forest

NOTES : Confinement by bedrock and lack of floodplain development indicate relatively stable stream courses.

Thin soils create rapid storm responses in these streams.

FLUVIAL SYSTEM - F6

The streams included in this system are Lynx Creek, Stinking Creek, Grizzly Creek, Adelaide Creek, Beaverdam Creek and Laforce Creek.

STREAM ORDER : 1°-3°, 4° on lower reaches of Beaverdam Creek

VALLEY FORM : Moderately to strongly sloping valley walls (KF-C3, KF-MX1).

VALLEY MATERIALS : A mixture of colluvium, moraine and residual with slope wash materials common in valley bottoms.

CHANNEL FORM : Broad, slightly meandering floodplain (0.25 km across). Was a braided stream in past.

CHANNEL GRADE : 3-4%

FLUVIAL MATERIALS: Sand with some gravels

SOILS : Well to rapidly drained Podzolic and Brunisolic Gray Luvisols and Regosols (50-75%); poorly drained Gleysols (25-50%).

VEGETATION

Valley Floor: Mixed dry and wet shrubland with open lodgepole pine stands. Some aspen and balsam poplar.

Valley Sides: Lodgepole pine

NOTES : Presence of meandering and braided reaches indicates stream courses have low to moderate stability.

Thin, rubbly and coarse-textured soils cause a relatively rapid storm response.

FLUVIAL SYSTEM - F7

This system is located in the upper reaches of the Torrens River.

STREAM ORDER : 1°-3°

VALLEY FORM : Steep sided slopes with broad (0.5 km) valley floor.

VALLEY MATERIALS : Colluvium on side slope with Cordilleran till on lower slope positions.

CHANNEL FORM : Slightly braided and meandering stream channel.

CHANNEL GRADE : 1.5-2%

FLUVIAL MATERIALS: Chiefly gravels and boulders with some sand.

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: White spruce and open shrubland

Valley Sides: Engelmann x white spruce, Lodgepole pine

NOTES: : Thin, coarse-textured soils cause a rapid storm response.

The presence of meandering and braided reaches indicates stream courses have low to moderate stability.

FLUVIAL SYSTEM - F8

This system includes the middle reaches of Kakwa River, the middle and lower reaches of Copton Creek, the upper reaches of Sheep Creek.

STREAM ORDER : 1°-4° on Copton Creek to confluence of Beaverdam Creek, 5° downstream. 4° on Kakwa River, 5° downstream from its confluence with Copton Creek.

VALLEY FORM : Glacially carved U-shaped valley, with moderate to steep sided slopes.

VALLEY MATERIALS : Glaciofluvial terraces border most of these reaches with some moraine and colluvium deposits.

CHANNEL FORM : Broad (0.25-1.25 km wide), meandering floodplain with relic oxbows and abandoned channels.

CHANNEL GRADE : 0.3-0.7%

FLUVIAL MATERIALS: Mixture of sands and gravels, with gravels predominating; gravel bars are common.

SOILS : Well-drained Cumulic Regosols (25-50%); imperfectly drained Orthic Regosols (25-50%); and Brunisolic Gray Luvisols; poorly-drained Mesisols (25-50%).

VEGETATION

Valley Floor: White spruce/Common horsetail; fluvial shrublands; some small organics on floodplain; some aspen.

Valley Sides: Aspen, lodgepole pine and white spruce

NOTES : The presence of deep coarse-textured deposits on glaciofluvial terraces causes a moderate to slow storm response.

The presence of abandoned channels and oxbows indicate relatively low stability of the stream course.

FLUVIAL SYSTEM - F9

This system includes Hat Creek and the lower reaches of Lynx Creek.

STREAM ORDER : 1°-2°

VALLEY FORM : Broad U-shaped valley

VALLEY MATERIALS : Mixture of moraine, colluvium and glaciofluvial

CHANNEL FORM : Relatively deep entrenched, actively downcutting and sidecutting meandering stream course.

CHANNEL GRADE : 1.5-2%

FLUVIAL MATERIALS: Sands predominate with some gravels

SOILS : Well-drained Orthic and Cumulic Regosols

VEGETATION

Valley Floor: Shrublands

Valley Sides: Lodgepole pine

NOTES : Soils on upper slopes are thin and coarse-textured, but thick glaciofluvial deposits occur on lower slopes. This combination creates a rapid to moderate storm response.

The presence of only a few meandering reaches indicates a moderately stable stream course.

FLUVIAL SYSTEM - F10

STREAM ORDER : 4°

VALLEY FORM : Steeply sloping valley walls with nearly level, dissected valley train terraces.

VALLEY MATERIALS : Coarse-textured glaciofluvial sand and gravels with colluvial materials.

CHANNEL FORM : Deeply entrenched streams with no floodplain, sinuosity controlled by bedrock and actively down and side cutting.

CHANNEL GRADE : 1-1.5%

FLUVIAL MATERIALS: Complex of sands and gravels with gravels predominating.

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Aspen, lodgepole pine

NOTES : The occurrence of deep, coarse-textured glaciofluvial materials on lower valley sides creates a slow to moderate storm response.

Confinement by bedrock and the lack of floodplain development creates highly stable stream courses.

FLUVIAL SYSTEM - F11

This system is located on the upper reaches of the Smoky River including small feeder streams.

STREAM ORDER : 4°-5°

VALLEY FORM : Broad, U-shaped valley with nearly level, valley train glaciofluvial terraces and steep side slopes.

VALLEY MATERIALS : Complex of coarse to moderately coarse-textured glaciofluvial terraces and colluvium. Gullying and slumping are common along the edges of the terraces.

CHANNEL FORM : Broad floodplain with sand and gravel bars common. The meandering stream course is confined to the 50 year floodplain and is side-cutting.

CHANNEL GRADE : 0.5%, 5-15% on feeder streams

FLUVIAL MATERIALS: Fluvial sands and gravels

SOILS : Well-drained Orthic Regosols (50-75%); moderately well-drained Cumulic Regosols (25-50%)

VEGETATION

Valley Floor: Balsam poplar, some white spruce

Valley Sides: Aspen/Rose/Hairy wild rye, Aspen-Lodgepole pine/ Bearberry

NOTES : The prevalence of meandering and the frequency of slumping due to oversteepening of terrace deposits indicates that the river course has low to moderate stability.

FLUVIAL SYSTEM - F12

This system includes Prairie Creek, the headwaters of the Cutbank River, Redrock and Little Redrock Creeks.

STREAM ORDER : 1°-4°

VALLEY FORM : A broad upland plateau to basin feature

VALLEY MATERIALS : Residual and moraine materials overlain by slopewash.

CHANNEL FORM : Slowly meandering to sinuous stream course with very little downcutting, floodplain not well-defined and no oxbows.

CHANNEL GRADE : 0.8-1%

FLUVIAL MATERIALS: Dominantly sands, some gravels and exposed bedrock.

SOILS : Well-drained Cumulic Regosols (70-90%); poorly drained Gleysols and Mesisols (10-30%)

VEGETATION

Valley Floor: Mixed grasslands and shrublands

Valley Sides: Mixed grasslands and shrublands

NOTES : The presence of moderately thin soils of variable texture causes these streams to have a rapid to moderate storm response.

The lack of floodplain development indicates that these streams are entrained in relatively stable courses.

FLUVIAL SYSTEM - F13

The streams included in this system are the middle reaches of Prairie Creek and its tributaries, lower reaches of Redrock Creek, Norris Creek, tributaries of the Kakwa River.

STREAM ORDER : 1°-3°, 4° on lower reaches of Prairie and Redrock Creeks.

VALLEY FORM : Narrow V-shaped valleys.

VALLEY MATERIALS : Colluvium and moraine

CHANNEL FORM : Small, narrow restricted floodplain with bedrock controlled channel. Slumps along banks caused by stream.

CHANNEL GRADE : 1.5-2.5%, 3-5% on tributaries

FLUVIAL MATERIALS: Mixture of sands and gravels

SOILS : Well-drained Cumulic Regosols (50-75%); moderately well-drained Orthic and Brunisolic Gray Luvisols (25-50%)

VEGETATION

Valley Floor: Pine and spruce forests

Valley Sides: Pine and spruce forests

NOTES : The confinement of these streams in bedrock-controlled channels indicates stream courses are moderately stable.

Thin soils in the upper watersheds of these streams cause moderate to rapid storm responses.

FLUVIAL SYSTEM - F14

This system is located on the middle reaches of the Torrens River.

STREAM ORDER : 4°

VALLEY FORM : Broad, glacially carved valley with wide valley bottoms.

VALLEY MATERIALS : Glaciofluvial outwash with kames, eskers and meltwater channels. Some Cordilleran tills are found.

CHANNEL FORM : Downcut through glaciofluvial materials and is now flowing over bedrock.

FLUVIAL MATERIALS: Glaciofluvial cobbles with fluvial gravels.

SOILS : Well to rapidly drained Brunisolic Gray Luvisols and Eluviated Eutric Brunisols.

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Lodgepole pine, Black spruce

NOTES : The presence of thin, coarse-textured soils in the upper part of this large watershed creates a rapid storm response.

Having cut down to bedrock, the stream course has reached quasi-equilibrium and is relatively stable.

FLUVIAL SYSTEM - F15

This system includes the upper reaches of Stetson, Nose, Boulder, North Wolf and Sulphur Creeks and the upper reaches of the Cutbank River.

STREAM ORDER : 1-4°

VALLEY FORM : Broad, moderately sloping valley with organic deposits in the headwaters.

VALLEY MATERIALS : Mixture of colluvium and cordilleran tills

CHANNEL FORM : Small meanders in a narrow floodplain with slight side-cutting exposing a few eroded scarps.

CHANNEL GRADE : 1-3%

FLUVIAL MATERIALS: Fluvial cobbles and gravels with some sands

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: Lodgepole pine and deciduous shrublands

Valley Sides: Lodgepole pine and White spruce forests

NOTES : The occurrence of slight meandering with only a few eroded scarps indicates a relatively stable stream course.

The predominance of thin, coarse-textured soils creates relatively rapid storm response.

FLUVIAL SYSTEM - F16

This system is located along Gunderson Creek.

STREAM ORDER : 1-4°

VALLEY FORM : Broad, former glacial meltwater channel with moderately to steeply sloping valley walls. Gunderson Creek is a misfit stream.

VALLEY MATERIALS : Colluvium and moraine deposits with slumping being common on valley walls.

CHANNEL FORM : Broad continuous floodplain with low flow rates in a meandering stream.

CHANNEL GRADE : 0.3-0.75%

FLUVIAL MATERIALS: Organics underlain by glaciofluvial gravels and fluvial silts.

SOILS : Rapidly drained Cumulic Regosols (50-75%); imperfect-drained Orthic Regosols (25-50%)

VEGETATION

Valley Floor: Open muskeg, with white spruce stands adjacent to creek.

Valley Sides: Lodgepole pine and aspen on south exposures with spruce on north exposures.

NOTES: : Having cut through glaciofluvial deposits in the past, the stream is currently relatively stable.

The effect of thin, coarse-textured soils on upper slopes is modified by thick glaciofluvial deposits on the broad valley floor to create a moderate to slow storm response.

FLUVIAL SYSTEM - F17

This system includes Chicken Creek and other unnamed tributary feeder streams of the Kakwa River.

STREAM ORDER : 1-4°

VALLEY FORM : Gently sloping valley with stable parent materials.

VALLEY MATERIALS : Dominantly moraine with some localized colluvium.

CHANNEL FORM : Bedrock controlled channel with a discontinuous floodplain, very little cutting action.

CHANNEL GRADE : 2-3%

FLUVIAL MATERIALS: Mostly sands with some gravels

SOILS : Well-drained Orthic and Cumulic Regosols (50-75%); poorly drained Gleysols and Mesisols (25-50%).

VEGETATION

Valley Floor: Wet and dry fluvial meadows and white spruce

Valley Sides: Mixture of coniferous and deciduous

NOTES : The presence of Gleysolic and Organic soils on the gentle terrain around upper reaches creates a moderate storm response.

Bedrock control creates highly stable stream courses.

FLUVIAL SYSTEM - F18

This system includes the lower reaches of Boulder Creek, Nose Creek, Prairie Creek, and Muddy Creek and the middle reaches of Pinto Creek.

STREAM ORDER : 4-5°

VALLEY FORM : Broad, gently sloping valley

VALLEY MATERIALS : Morainal deposits, as well as glaciolacustrine.

CHANNEL FORM : Meandering stream course with a moderately wide continuous floodplain and a few oxbows.

CHANNEL GRADE : 0.5-1%

FLUVIAL MATERIALS: Gravels and cobbles with some sand

SOILS : Well-drained Orthic Regosols

VEGETATION

Valley Floor: White spruce forest, regenerating aspen

Valley Sides: White spruce forest, regenerating aspen

NOTES : The presence of deep soils derived from till causes moderate storm response.

The predominance of meandering reaches and the occurrence of oxbows indicates that stability of stream courses is low to moderate.

FLUVIAL SYSTEM - F19

This system is located on the lower reaches of Wolf Creek.

STREAM ORDER : 3-5°

VALLEY FORM : Broad, subdued valley

VALLEY MATERIALS : Morainal deposits and peat

CHANNEL FORM : Meandering stream course on a broad continuous floodplain.

CHANNEL GRADE : 0.5-1%

FLUVIAL MATERIALS: Fine fluvial gravels and silt

SOILS : Moderately well-drained Cumulic Regosols (50-75%); poorly-drained Mesisols (25-50%).

VEGETATION

Valley Floor: Deciduous vegetation on organics with white spruce, balsam poplar and aspen groves on gravels.

Valley Sides: Deciduous vegetation on organics with white spruce, balsam poplar and aspen groves on gravels.

NOTES : The predominance of deep soils derived from fine-textured continental till creates a moderate storm response.

The predominance of meandering reaches combined with a lack of oxbow and similar features indicates that the stream course is moderately stable.

FLUVIAL SYSTEM - F20

This system is located on the middle reaches of the Cutbank River.

STREAM ORDER : 5°

VALLEY FORM : Gently to moderately sloping broad valley. Some terraces scattered along river course.

VALLEY MATERIALS : Till predominates with some colluvium. Glaciofluvial and glaciolacustrine terraces.

CHANNEL FORM : Meandering stream course with numerous oxbows and point bars. There is a broad discontinuous floodplain. High steep banks with overhanging vegetation common.

CHANNEL GRADE : 0.5%

FLUVIAL MATERIALS: Fluvial cobbles with sand and silt.

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: White spruce and balsam poplar groves with some deciduous shrublands.

Valley Sides: Lodgepole pine on lower slopes, aspen on upper slopes, black spruce and pines on terraces.

NOTES : The frequency of meandering and oxbows indicates that this stream course has moderate to low stability.

The occurrence of thin, coarse textured soils surrounding the upper reaches of this river creates a moderate to rapid storm response.

FLUVIAL SYSTEM - F21

This system includes the middle and lower reaches of the Narraway River, the middle reaches of the Kakwa River, Wapiti River and their feeder streams, the middle reaches of the Smoky River between the confluences with Norris Creek and the Kakwa River and the upper reaches of the Wapiti River where the Narraway joins it.

STREAM ORDER : 5°

VALLEY FORM : Steep sided, deep, fluvial valley with some terraces on the valley sides.

VALLEY MATERIALS : Colluvium and undifferentiated materials with exposed bedrock. Slumping and gullying is common. The terraces are of glaciofluvial origin. Some portions have moraine and glaciolacustrine deposits.

CHANNEL FORM : The bedrock controlled channel is downcutting with a discontinuous floodplain (some minor point bars). The banks are gradual to abrupt but not vertical.

CHANNEL GRADE : 0.5-1.5%

FLUVIAL MATERIALS: Coarse gravels

SOILS : Well-drained Cumulic and Orthic Regosols (55-75%); moderately well-drained Eluviated Eutric Brunisols and Brunisolic Gray Luvisols (25-40%).

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Aspen on south exposures with lodgepole pine and black spruce on slumps.

NOTES : The relative lack of meandering reaches and floodplain development indicates that these river courses are relatively stable.

FLUVIAL SYSTEM - F22

This system includes Bolton Creek, tributaries of the Simonette River and the headwaters of the Latornell River.

STREAM ORDER : 1-3°

VALLEY FORM : Moderately steeply sloping V-shaped valleys

VALLEY MATERIALS : Moraine and colluvium

CHANNEL FORM : Narrow, continuous floodplain with a few meander scars and alluvial terraces.

CHANNEL GRADE : 0.5-1.5%

FLUVIAL MATERIALS: Silt and sand with some fluvial gravels.

SOILS : Well-drained Cumulic Regosols (55-75%); poorly drained Gleysols (25-45%).

VEGETATION

Valley Floor: Spruce and aspen/balsam poplar forest, discontinuous shrublands.

Valley Sides: Spruce and pine along Bolton Creek, pine and spruce along the Simonette tributaries.

NOTES : Beaver dams are obstructing portions of the Latornell headwaters.

The relative lack of meander scars on floodplains indicates that these stream courses are relatively stable.

The predominance of relatively thick and fine-textured soils combined with coarse-textured veneers around the Latornell River gives these streams a moderate to slow storm response.

FLUVIAL SYSTEM - F23

This system is located on the lower reaches of the Kakwa River and includes feeder streams on side slopes.

STREAM ORDER : 5° on Kakwa River, 1-2° on tributaries

VALLEY FORM : Broad, moderately sloping valley

VALLEY MATERIALS : Colluvium and till with slumping common

CHANNEL FORM : Sinuous channel with a discontinuous floodplain and alluvial terraces, point bars are common.

CHANNEL GRADE : 0.2-0.4%, up to 10% on feeder streams

FLUVIAL MATERIALS: Coarse gravel, cobbles and boulders

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly drained Orthic Regosols (25-50%)

VEGETATION

Valley Floor: Spruce forest

Valley Sides: Spruce forest

NOTES : Confinement of lower reaches by bedrock gives this river a relatively stable course.

FLUVIAL SYSTEM - F24

This system includes tributary streams of the lower reaches of the Kakwa, Cutbank and Smoky Rivers.

STREAM ORDER : 1-3°

VALLEY FORM : Steep sided, U to V shaped valleys. V-shaped valleys are more prominent to the north as streams downcut to meet the Kakwa River.

VALLEY MATERIALS : Moraine is predominant surficial material with some colluvium.

CHANNEL FORM : Sinuous, bedrock controlled channel with shallow abrupt banks.

CHANNEL GRADE : 1-2%

FLUVIAL MATERIALS: Sand, gravel and cobbles

SOILS : Poorly drained gleysols (50-75%); well drained Orthic Regosols and Brunisols (25-50%).

VEGETATION

Valley Floor: Lodgepole pine and spruce forests, secondary occurrence of shrubland and balsam poplar.

Valley Sides: Lodgepole pine and spruce forests, secondary occurrence of shrubland and balsam poplar.

NOTES : Storm response is slow to moderate as streams originate in organic areas, and watersheds are covered with relatively thick, coarse-textured soils.

Confinement by bedrock creates relatively stable stream courses.

FLUVIAL SYSTEM - F25

This system is the Little Smoky River in its entirety within the study area.

STREAM ORDER : 3-4°

VALLEY MATERIALS : Till and glaciofluvial sands, peat as well.

CHANNEL FORM : Continuous meandering floodplain with a deep clear water channel. Relic oxbows and meander scars are present.

CHANNEL GRADE : 0.1-0.2%

FLUVIAL MATERIALS: Glaciofluvial silt and sand

SOILS : Well-drained Cumulic Regosols (50-60%) and poorly drained Gleysols and Mesisols (40-50%).

VEGETATION

Valley Floor: Dry fluvial meadows and deciduous shrublands, lodgepole pine and white spruce on floodplain.

Valley Sides: Dry fluvial meadows and deciduous shrublands with lodgepole pine on glaciofluvial deposits.

NOTES : The occurrance of coarse-textured glaciofluvial veneers over moderately fine-textured till in this watershed creates a relatively slow storm response.

Although oxbows and meander scars are present, this river has cut into glaciofluvial materials and its present course is relatively stable.

FLUVIAL SYSTEM - F26

This system is located on the middle reaches of the Simonette River.

STREAM ORDER : 3-4°

VALLEY FORM : Steep, highly dissected valley walls.

VALLEY MATERIALS : Moraine and residual with colluvium (slumping).

CHANNEL FORM : Meandering stream course with some braided reaches. Point bars and oxbows common.

CHANNEL GRADE : 0.5-0.7%

FLUVIAL MATERIALS: Coarse gravels and cobbles

SOILS : Well-drained Cumulic Regosols (50-75%); poorly drained Gleysols (25-50%)

VEGETATION

Valley Floor: White spruce and black spruce forests and deciduous shrublands

Valley Sides: Lodgepole pine with some white spruce.

NOTES : The presence of braided reaches and oxbows indicates the stream course is relatively unstable, with shifting channel patterns caused by frequent slumps.

The prevalence of relatively deep fine-textured soils on slopes give streams a moderate stream response.

FLUVIAL SYSTEM - F27

This system is located on the lower reaches of the Simonette River.

STREAM ORDER : 3-4°

VALLEY FORM : Broad, gently sloping U-shaped valley

VALLEY MATERIALS : Morainal deposits

CHANNEL FORM : Continuous, broad floodplain with a meandering river channel. There are some braided reaches with point bars common.

CHANNEL GRADE : 0.3-0.5%

FLUVIAL MATERIALS: Fluvial gravels

SOILS : Well-drained Cumulic and Orthic Regosols (50-75%); poorly-drained gleysols (25-50%).

VEGETATION

Valley Floor: Aspen, white spruce, black spruce and deciduous shrublands.

Valley Sides: Aspen, white spruce and lodgepole pine.

NOTES : During floods a large area is flooded with shallow water.

The occurrence of large braided reaches indicates that stability of the stream course is relatively low.

FLUVIAL SYSTEM - F28

This system includes the headwater tributaries of the Little Smoky River.

STREAM ORDER : 1-2°

VALLEY FORM : Narrow, moderately sloping valleys

VALLEY MATERIALS : Organics in upper reaches with moraine on surrounding side slopes.

CHANNEL FORM : Meandering stream course flowing through organics.

CHANNEL GRADE : 0.9-1.2%

FLUVIAL MATERIALS : Sands and organics

SOILS : Poorly drained Mesisols and Gleysols

VEGETATION

Valley Floor : Deciduous shrublands and sedge meadows with some lodgepole pine stands

Valley Sides : Lodgepole pine

NOTES : This river has a relatively slow storm response because it originates in an area of organic soils and relatively thick, fine-textured till deposits covered with coarse-textured glaciofluvial materials predomnate elsewhere in the watershed.

Streams are meandering but courses appear to be relatively stable.

FLUVIAL SYSTEM - F29

This system is Deep Valley Creek and its tributaries.

STREAM ORDER : 1-3°

VALLEY FORM : U-shaped valley with moderately to strongly sloping valley walls.

VALLEY MATERIALS : Dominantely colluvium derived from moraine, Tertiary gravels and residual.

CHANNEL FORM : Meandering to sinuous stream course with extensive glaciofluvial deposits bordering channel.

CHANNEL GRADE : 1.0-1.5%

FLUVIAL MATERIALS: Sand with organics on floodplain.

SOILS : Poorly drained Mesisols (55-75%); poorly drained Mesisols and Gleysols (25-45%).

VEGETATION

Valley Floor: Lodgepole pine on glaciofluvial deposits with dwarf birch and black spruce on wet areas.

Valley Sides: Lodgepole pine

NOTES : Prominent kame and sinuous esker complexes occur in valley bottom.

Most of these watersheds consist of a nearly level plateau and valley wall materials are thick, giving streams a moderate to slow storm response.

The lack of braided reaches and recent meander scars indicates that stream courses are relatively stable.

FLUVIAL SYSTEM - F30

This system is located on the middle to upper reaches of Muddy Creek.

STREAM ORDER : 2-4°

VALLEY FORM : Gentle to moderately sloping U-shaped valley

VALLEY MATERIALS : Dominantly moraine deposits

CHANNEL FORM : Strongly meandering stream with a discontinuous floodplain. It has steep banks with slumping common in middle reaches. Where a floodplain is present oxbows are common.

CHANNEL GRADE : 0.6-0.75%

FLUVIAL MATERIALS: Mixture of sands and gravels

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: White spruce and balsam poplar

Valley Sides: Aspen, white spruce and black spruce

NOTES : The prevalence of deep, fine-textured soils across this large watershed gives streams a relatively slow storm response.

The commonness of erosional scarps and the occurrence of oxbows indicates that the stream course has moderate to low stability.

FLUVIAL SYSTEM - F31

This system includes the lower reaches of Nose and Pinto Creeks.

STREAM ORDER	:	5° on nose, 4° on Pinto Creek
VALLEY FORM	:	Deeply incised, V-shaped valley with erosional scarp faces common.
VALLEY MATERIALS	:	Undifferentiated colluvium with slumping common.
CHANNEL FORM	:	Very sinuous stream course with low-lying alluvial terraces. They are downcutting and sidecutting through glaciolacustrine sediments with a minor occurrence of point bars.
CHANNEL GRADE	:	0.4-0.5%
FLUVIAL MATERIALS	:	Silts and sands with some gravels
SOILS	:	Well to moderately well-drained Orthic and Cumulic Regosols.
VEGETATION		
Valley Floor	:	Aspen and white spruce
Valley Sides	:	Aspen and white spruce with some balsam poplar
NOTES	:	The predominance of deep, fine-textured soils gives streams a relatively slow flood response. The lack of meander scars indicates that stream courses are moderately stable despite the erodability of valley floor materials.

FLUVIAL SYSTEM - F32

The streams included in this system are the tributary streams of lower Nose, Calahoo and Sylvester Creeks.

STREAM ORDER	:	1-3°
VALLEY FORM	:	Deeply incised V-shaped valleys
VALLEY MATERIALS	:	Glaciolacustrine and glaciofluvial materials with slumping common.
CHANNEL FORM	:	Sinuous stream course with no floodplain. Downcutting is the major process.
CHANNEL GRADE	:	1.2-1.7%
FLUVIAL MATERIALS	:	Predominantly silts and clays with some sand
SOILS	:	Well to moderately well drained Orthic Regosols.

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Aspen and white spruce

NOTES : These streams carry a heavy suspended load due to downcutting through glaciolacustrine sediments.

Rapid downcutting through erodable materials make stream courses relatively stable.

The predominance of deep, fine-textured soils covered with coarse-textured overlays gives streams a moderate to slow storm response.

FLUVIAL SYSTEM - F33

This system includes the upper reaches of Pinto Creek and the upper and middle reaches of Big Mountain and Bald Mountain Creeks.

STREAM ORDER : 2-4°

VALLEY FORM : Subdued valley with streams shallowly entrenched

VALLEY MATERIALS : Glaciolacustrine sediments.

CHANNEL FORM : Meandering stream course with a discontinuous floodplain and relic oxbows. Steep banks have low level slumps occurring.

CHANNEL GRADE : 0.1-0.4%

FLUVIAL MATERIALS: Silts and sands

SOILS : Imperfectly drained Cumulic Regosols (50-75%); moderately well-drained Orthic Regosols (25-50%).

VEGETATION

Valley Floor: White spruce, balsam poplar and deciduous shrublands.

Valley Sides: Aspen

NOTES : The commonness of erosional scarp faces and oxbows indicates that stability of stream courses is moderate to low.

Gentle slopes in watersheds characterized by deep, fine-textured soils give streams a moderate to slow storm response.

FLUVIAL SYSTEM - F34

This system includes the upper middle reaches of the Cutbank River.

STREAM ORDER : 3-4°

VALLEY FORM : Very steeply sloping, confined U to V-shaped valley.

VALLEY MATERIALS : Colluvial materials with slumping common.

CHANNEL FORM : Continuous floodplain with gravel bars, meander scars and relic oxbows. The stream course is not well defined and the floodplains up to 0.5 km wide.

CHANNEL GRADE : 0.5-0.6%

FLUVIAL MATERIALS: Sands and gravels with sands dominating

SOILS : Well drained Cumulic and Orthic Regosols

VEGETATION

Valley Floor: White spruce forests with some open deciduous shrublands

Valley Sides: Aspen, white spruce and lodgepole pine with white spruce dominating on lower slopes.

NOTES : Poor definition of the stream course and the presence of meander scars indicate that stability of the stream course is moderate to low.

The predominance of thin, coarse-textured soils in headwater reaches gives this river a moderate to rapid storm response.

FLUVIAL SYSTEM - F35

This system includes the tributary streams of the Cutbank River.

STREAM ORDER : 2-3°

VALLEY FORM : Broad, U-shaped valleys with steep slopes

VALLEY MATERIALS : Dominantly colluvium with slumping common. Alluvial fans and slope wash materials are present on wet valley bottoms.

CHANNEL FORM : Sinuous channel with a continuous, narrow floodplain. Relic oxbows are found in the middle reaches.

CHANNEL GRADE : 0.8-1.6%

FLUVIAL MATERIALS: Sand and silt

SOILS : Well drained Cumulic Regosols (50-75%); well-drained Orthic Regosols (25-50%)

VEGETATION

Valley Floor: Deciduous shrublands, black spruce and white spruce.

Valley Sides: Aspen, white spruce and lodgepole pine

NOTES : Stream courses have relatively low stability in reaches with low slopes, but are otherwise moderately stable.

The predominance of deep, coarse-textured soils gives streams a moderate storm response.

FLUVIAL SYSTEM - F36

This system includes the lower middle and lower reaches of the Cutbank River with feeder streams and the lower reaches of Big Mountain Creek.

STREAM ORDER : 5°

VALLEY FORM : Moderately sloping V-shaped valley cut through a glaciolacustrine basin.

VALLEY MATERIALS : Glaciolacustrine and colluvium with pronounced slumping on valley sides.

CHANNEL FORM : Meandering stream course with a discontinuous floodplain, relic oxbows, meander scars and gravel bars. Stream course has shifted as a result of slumping. Some alluvial terraces are present.

CHANNEL GRADE : 0.3-0.5%; up to 3% on feeder streams.

FLUVIAL MATERIALS: Gravels, silts and sands

SOILS : Moderately well drained Cumulic Regosols (50-75%); imperfectly to poorly-drained Rego Gleysols (25-50%).

VEGETATION

Valley Floor: Non-vegetated

Valley Sides: Aspen, black spruce and some white spruce

NOTES : Streams have heavy silt loads because of erodability of watershed materials.

Extensive occurrence of oxbows and meander scars indicates stability of the stream course is moderate to low.

The occurrence of deep, fine-textured soils gives these streams a moderate storm response.

FLUVIAL SYSTEM - F37

This system includes the middle reaches of the Latornell River.

STREAM ORDER : 3°

VALLEY FORM : Moderately sloping, narrow U-shaped valley

VALLEY MATERIALS : Glaciolacustrine with some glaciofluvial

CHANNEL FORM : Discontinuous floodplain with a sinuous flow pattern controlled by valley materials.

CHANNEL GRADE : 0.3%

FLUVIAL MATERIALS: Range from silt to coarse gravel

SOILS : Imperfectly drained Cumulic Regosols (50-75%); well drained Eluviated Eutric Brunisols (25-50%).

VEGETATION

Valley Floor: White spruce and deciduous shrubland

Valley Sides: White spruce, black spruce and balsam poplar

NOTES : Storm response is moderately slow because of thick, fine-textured soils with high water storage capacity.

The stream course is relatively stable because of control by valley wall materials.

FLUVIAL SYSTEM - F38

This system is located on the lower reaches of the Latornell River.

STREAM ORDER : 4°

VALLEY FORM : Shallow, box-shaped valley cut into a glaciolacustrine plain

VALLEY MATERIALS : Glaciolacustrine

CHANNEL FORM : Highly meandering stream course through a continuous floodplain. There are numerous low alluvial terraces.

CHANNEL GRADE : 0.2-0.3%

FLUVIAL MATERIALS: Silts, sands and some gravels

SOILS : Moderately well-drained Cumulic Regosols (50-75%); imperfectly to poorly drained Rego Gleysols (25-50%).

VEGETATION

Valley Floor: Balsam poplar, white spruce and deciduous shrublands.

Valley Sides: Aspen

NOTES : Stream has a heavy silt load.

The presence of numerous oxbows and meander scars indicates a relatively unstable stream course.

The prevalence of deep, fine-textured soils with coarse-textured overlays and the subdued topography in this watershed creates a relatively slow storm response.

FLUVIAL SYSTEM - F39

This system includes portions of Lignite and Economy Creeks.

STREAM ORDER : 1-2°

VALLEY FORM : Subdued valleys cut through glaciolacustrine deposits.

VALLEY MATERIALS : Glaciolacustrine

CHANNEL FORM : Meandering stream coarse with a discontinuous floodplain.

CHANNEL GRADE : 0.3-0.5%

FLUVIAL MATERIALS: Silt and sand

SOILS : Poorly drained Rego Gleysols (50-75%); moderately well-drained Cumulic Regosols (25-50%).

VEGETATION

Valley Floor: Balsam poplar and deciduous shrublands

Valley Sides: Aspen

NOTES : Storm response is slow because of deep, fine-textured soils and subdued topography in the watershed.

The lack of shifting channel features indicates that these small streams have relatively stable courses.

FLUVIAL SYSTEM - F40

This system is located on the lower reaches of the Smoky River.

STREAM ORDER : 6°

VALLEY FORM : Deeply incised into a glaciolacustrine plain this is a broad box-shaped valley with colluvium on relic banks 0-2 km from present stream course. There are also narrow, deeply-incised, steep-sided tributary valleys. Glaciofluvial terraces occur on valley sides.

VALLEY MATERIALS : Glaciolacustrine, colluvium and glaciofluvial materials.

CHANNEL GRADE : 0.1-0.2%

FLUVIAL MATERIALS: Dominantly gravels, finer materials have been removed because of high flow rates.

SOILS : Well-drained Cumulic Regosols (50-75%); imperfectly-drained Rego Gleysols (25-50%).

VEGETATION

Valley Floor: Aspen, balsam poplar, white spruce and deciduous shrublands.

Valley Sides: Aspen and white spruce forests

NOTES : Although oxbows and meander scars on elevated terraces indicate low stability in the past, the present stream course is moderately stable.

APPENDIX A

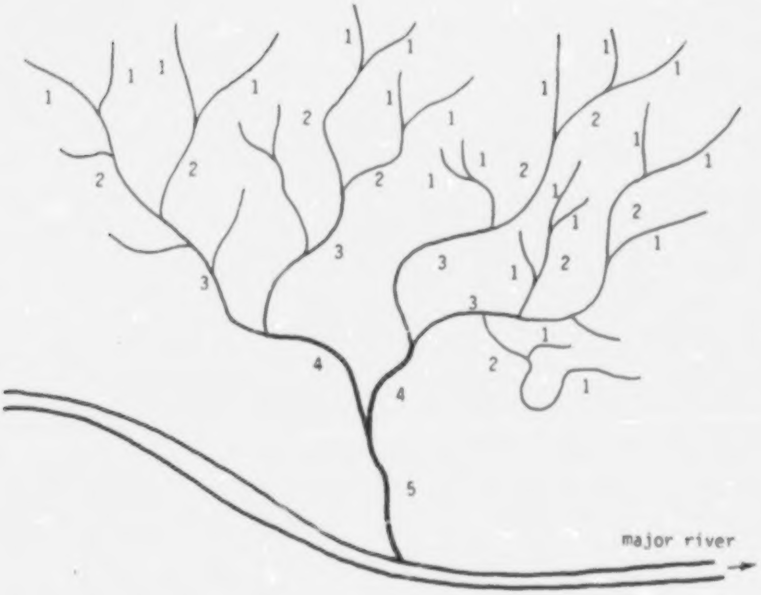
PROPERTIES OF PERMANENT STREAMS

I. CHANNEL ORDER

A. A sequential order system is used (Strahler, 1952). The first order represents the smallest permanent stream mappable.

B. Described as follows:

- headwater tributaries (1-3)
- lower tributaries (3-4)
- middle reaches of major rivers (4-5)
- lower reaches of major rivers (6)


1
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1
2
2
2
2
2
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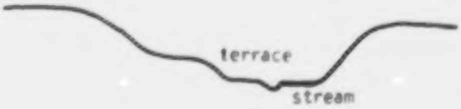
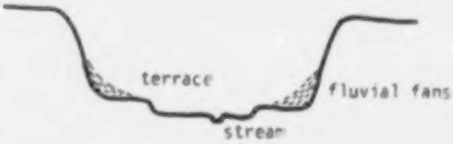
2
2
3
3
3
3
4
4
5
major river

II. MORPHOLOGY

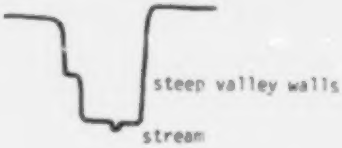
1. Broad Glacial Valley
   - with or without terraces
   - glacial meltwaters and spillways
   - underfit streams


terrace
stream

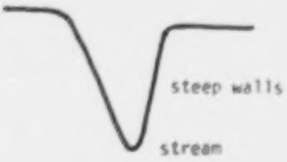
2. Broad U-Shaped Valley
   - with or without terraces
   - major rivers and secondary rivers usually
   - may have fluvial fans
   - more bedrock control
   - may include point bars, lower fluvial terraces


terrace
fluvial fans
stream

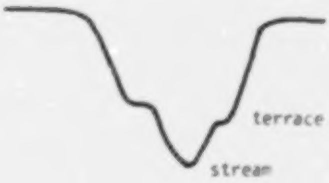
3. Box-Shaped Canyon
   - bedrock controlled
   - vertical walls


steep valley walls
stream

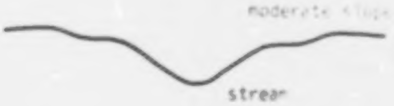
4. Narrow V-Shaped Valley
   - often first to third order streams
   - banks are steep (55-70%)


steep walls
stream

5. Broad, Large V-Shaped Valley
   - with or without terraces
   - bedrock control
   - strongly dissected
   - 45-60%


terrace
stream

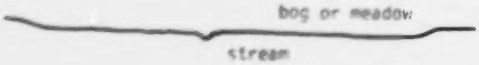
6. Wide, Small V-Shaped Valley
   - moderately dissected
   - moderately sloping 45-60%
   - moderate to high flow gradient


moderate slope
stream

7. Low Relief Channels

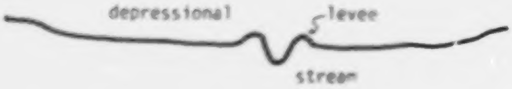
(a) Low Banks

- characteristic of bogs and meadows
- sometimes intermittent
- usually low flow gradient
- low banks-water close to the surface


bog or meadow
stream

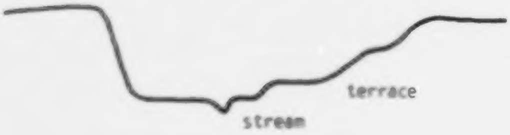
(b) High Banks

- channels with high banks but with low relief around the channel
- often depressional with wetlands


depressional
levee
stream

8. Partial U-Shape

- landform control on alternate banks
- usually till or bedrock
- bank control dependent on materials
- moderate to large substrate usually
- lower bank usually forested


terrace
stream

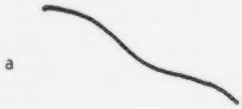
9. Sloping Valley Walls

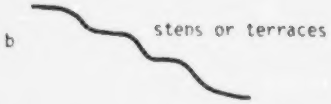
a. regular

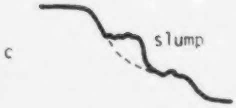
b. stepped

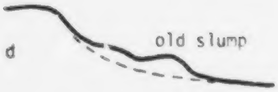
c. active

d. stable




b
stens or terraces

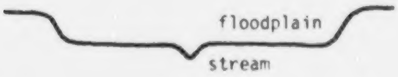


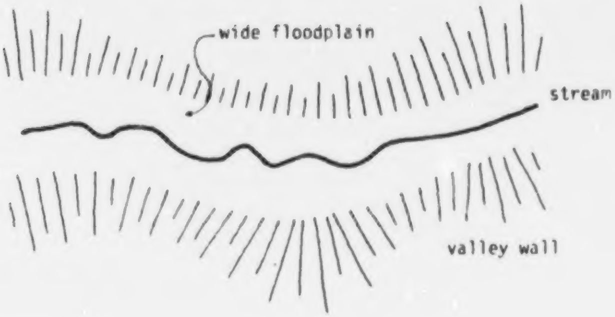


III. FLOODPLAINS

1. Continuous Broad

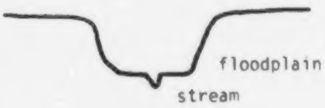
   - normally within wide valleys

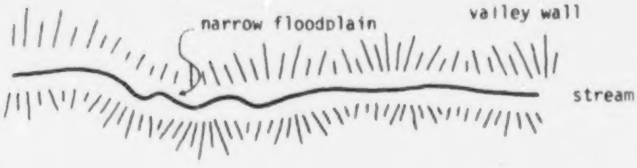

floodplain
stream


wide floodplain
stream
valley wall

2. Continuous Narrow

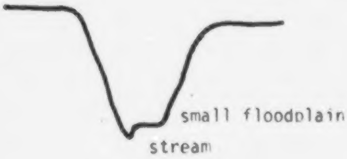
   - confined valleys

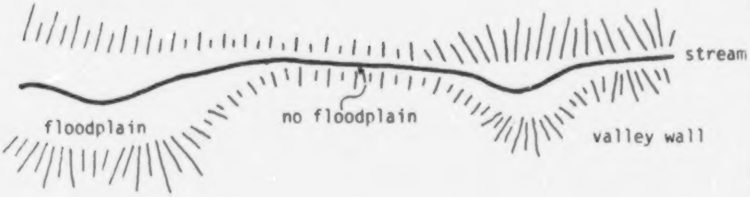

floodplain
stream


narrow floodplain
valley wall
stream

3. Discontinuous

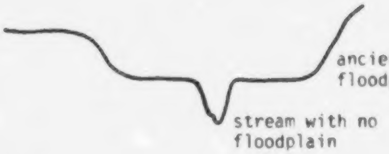
   - often in confined valleys

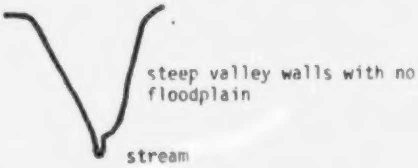

small floodplain
stream


stream
floodplain
no floodplain
valley wall

4. Absent

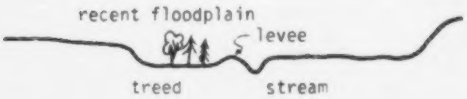
   - steep walled valleys, entrenched streams


ancient floodplain
stream with no floodplain


steep valley walls with no floodplain
stream

5. Recent

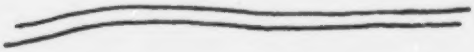
   - river recently created new floodplain, may be vegetated


recent floodplain
levee
treed
stream

IV. CHANNEL MORPHOLOGY

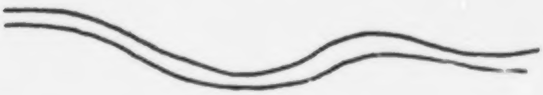
1. Straight

   - minor curvature within a reach



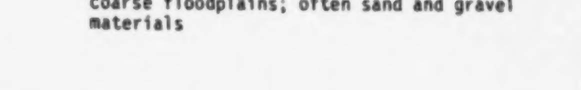
2. Sinuous

   - significant curvature within a reach



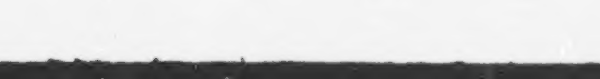
3. Irregular Sinuous

   - a channel pattern which is not straight or sinuous and does not have a repeatable pattern. Often this is the result of structurally controlled (bedrock) terrain or parent geological materials (i.e. till)



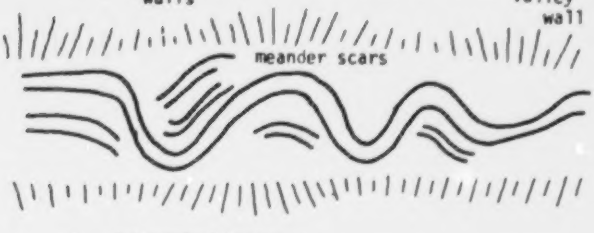
4. Classical Braiding

   - unstable and overlapping islands, found on glacial outwash plains; valley trains and alluvial fans in mountains or foothills; coarse floodplains; often sand and gravel materials



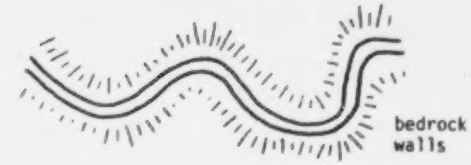
5. Confined Meanders

   - often bedrock controlled valley with meandering river confined by valley walls



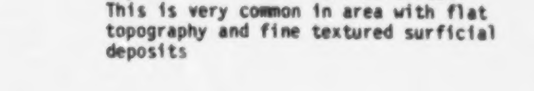
6. Entrenched Meanders

   - bedrock or material controlled meanders (meanders may have origin in overlying material or in stagnant ice)



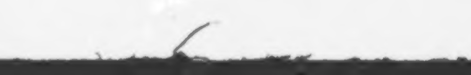
7. Regular Meanders

   - channel pattern is characterized by a repeatable pattern



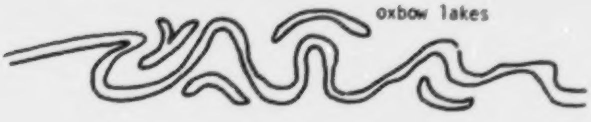
8. Tortuous Meanders

   - channel pattern is more or less repeatable but much more contorted. This is very common in area with flat topography and fine textured surficial deposits



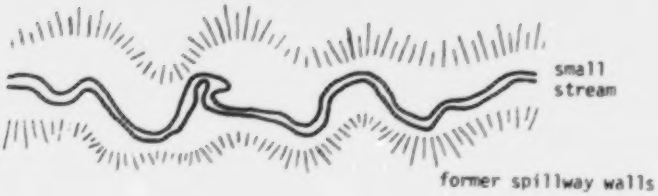
9. **Unconfined Meanders with Oxbows**

- occurs on muskeg and silt or sand-filled former glacial lake beds and flat-gradient valleys filled with thick, medium textured alluvium


oxbow lakes

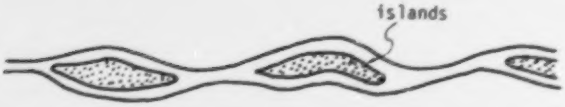
10. **Meanders within Meanders**

- misfit streams flowing in former glacial spillways


small
stream
former spillway walls

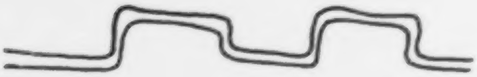
11. **Irregular Channel Splitting with Islands (Arastromosing Pattern)**

- large rivers in bedrock valleys contains intermittent sand and gravel islands



12. **Rectangular Channels**

- bedrock controlled, jointed or faulted.



V. CHANNEL AND VALLEY MATERIALS

Fine	0 to 2 mm	or	0 to 2 mm
Moderate	2 mm to 256 mm		2 to 100 mm
Coarse	256 mm +		100 + mm

The first is a simplified form of the classes used by most of Fish and Wildlife. The other was used in B.C. for mapping purposes.

Descriptors:

1. Description and cover of parent geologic material and bedrock; the cover should be identified to the nearest 10%.
2. The geomorphic process associated with the materials may be included.
3. Outcrops within the substrates should be included.

VI. CHANNEL GRADIENT

Slope is the average slope of the reach (elevation or rise over the length). Slope is given to the nearest percent above 3%, and to the nearest 0.1%). Slopes are measured from the topographic map.

Descriptors:

	Steep	greater than 5%
	Shallow	less than 5% (Chamberlain, 1977)
or	Low	0-3%
	Moderate	3-5%
	High	greater than 5% (Nelson, 1984)

VII. VEGETATION

- vegetation physiognomy as per manual or any additions found to be necessary.
- should include a vegetation association if possible.

(The vegetation is important and has been found to be a good indicator of fisheries productivity and habitat (pers. comm. Dave Halstead).

Volume

2

Integrated Resource Inventory

Alberta
ENERGY AND
NATURAL RESOURCES
Resource Evaluation
and Planning

INTEGRATED RESOURCE INVENTORY
OF DEEP BASIN STUDY AREA (NTS 83L)
VOLUME II

INTEGRATED RESOURCE INVENTORY OF THE DEEP BASIN AREA (NTS 83L)

VOLUME II

VEGETATION CLASSIFICATION

1984
Edmonton

Alberta Energy and Natural Resources
Resource Inventory and Appraisal
Resource Evaluation and Planning Division

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1. INTRODUCTION

This volume of the report deals with the vegetative (Forage Inventory) component of the Integrated Resource Inventory of the Deep Basin study area. The emphasis is on the detailed description of plant associations. These are organized by ecoregion and discussed in terms of their environmental relationships within the ecoregion concept.

1.1 Purpose

The purpose of the vegetation inventory is to classify plant communities into relatively discrete groups; plant associations and ecoregions, which indicate sets of environmental and climatic parameters. This classification can be used by resource managers who are interested in the biotic potential of the landscape and who require an understanding of the vegetation interactions to make resource decisions.

To accomplish these objectives data on species composition, cover, vigor, successional status, soils and related environmental factors are collected and analyzed as described below.

1.2 Methods

1.2.1 Field Sampling

Prior to field sampling, background information from previous resource inventory studies was collected and analyzed to provide a preliminary vegetation stratification of the study area. This includes physical land data from the Land Classification Section, ecological land classification data from the Resource Appraisal Section, Soil Survey

(Twardy and Corns, 1980) and forest cover data from the Phase III Forest Inventory Group. Representative field plots were subsequently established within each forest cover type to determine the plant communities as they relate to different site conditions. The locations of the plots were determined from aerial photographs and coincided with soil observations where possible.

At each site, a 20 x 20 m plot was established to determine the tree species composition, percent cover and vigor. A 5 x 5 m plot was used to inventory the shrub layer and a 20 m transect with five 1 x 0.5 m plots was employed to determine forb, grass, moss, and lichen species cover. The plant species were listed according to the following vegetation layers:

A_1 - dominant tree including main canopy
A_2 - understory trees over 5.0 m tall
E - epiphytes
B_1 - tall shrub and tree regeneration - 2.5 to 5.0 m tall
B_2 - low shrubs and tree regeneration less than 2.5 m tall
C - forb species
G - graminoids - grass and grass-like
D - mosses
L - lichen

Other site information collected includes: elevation, slope gradient, aspect, exposure, shape of slope, microrelief, soils, parent materials, ecological moisture regime, ecological nutrient regime, drainage conditions, flood hazard, site disturbance, surface substrate age and height of the forest stand and general comments about the site.

1.2.2 Data Analysis

The plot data was grouped by species composition, that is, plots having similar species presence and cover values, to define plant associations.

The analysis of the data was conducted using the Klinka-Phelps Vegetation Program and the Environmental Site Program. A detailed description of the programs and the actual tables are given in Appendix B.

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2. PLANT ASSOCIATIONS AND ECOREGIONS

There are 44 plant associations recognized in the six ecoregions within the Deep Basin study area. The ecoregions are based on the broad concepts presented in Ecoregions of Alberta (Strong and Leggat, 1981) with revisions made possible by more intensive fieldwork and the inclusion of characteristic plant associations on modal sites as definitional criteria. The ecoregion lines are presented on the Ecological Land Classification maps accompanying this report.

The plant associations are distributed among ecoregions as follows:

Boreal Mixedwood - 13
Boreal Foothills - 8
Boreal Uplands - 11
Subalpine - 10
Alpine - not differentiated
Montane - 2

The distinguishing features of each ecoregion, its characteristc plant associations and a discussion of interrelationships follows below with detailed vegetation tables and environmental tables for each association given in Appendix D.

2.1 Boreal Mixedwood

The Boreal Mixedwood Ecoregion (Ecoregion 8, Strong and Leggat) occurs in the northern portion of the study area (Figure 2, Vol. 1) at lower elevations than the Boreal Foothills Ecoregion (below approximately 860 m asl).

The climate of this ecoregion is continental. More than 70% of yearly precipitation is received during the summer months with July being the wettest month. Winter temperatures are colder than other ecoregions in the study area with chinooks not as important to the winter climate. Specific climatic parameters for stations with each study area are shown in Appendix E.

The topography of the area is level to undulating. Glaciolacustrine materials dominate as this is a former glacial lake basin.

Aspen dominates the forest vegetation on moderately well-drained modal sites with luvisolic soils in this ecoregion. Understory vegetation typically consists of a well developed deciduous shrub layer of rose and low-bush cranberry and a variety of herbaceous plants and grasses. The moss layer is usually sparse. Secondary succession is by white spruce, although a high frequency of fires has slowed its establishment over large portions of the ecoregion in the study area. Invasion by spruce will be slow due to lack of an adequate seed source in many areas. As aspen stands succeed to white spruce the shrub and herb layers tend to decrease in cover while the moss layer increases.

Balsam poplar occurs on imperfectly drained sites with gleyed luvisolic and gleysolic soils. Aspen and white spruce are often a component of these stands. Understory vegetation is generally more lush than on modal sites with the presence of bracted honeysuckle and red osier dogwood reflecting higher moisture availability. Succession to white spruce would be expected to be faster on these moisture sites but vegetation competition from shrub and herb layers slows seedling establishment.

Lodgepole pine is restricted to dry sites with coarse textured eolian and glaciofluvial materials. Shrub and forb layers are generally poorly developed on these sites with lichens commonly occurring. Soils are dominantly Eluviated Eutric Brunisols, with some Brunisolic Gray Luvisols.

Poorly drained areas support black spruce and tamarack wetlands with some sedge meadows and open shrubland occurring depending on local drainage conditions. Gleysols and organic soils are common at these sites.

There are 13 associations described for the Boreal Mixedwood in this study. Of these, three represent near modal conditions, four occur on imperfectly drained soils, two are wetland associations and four occur under rapidly to well drained conditions.

The upper elevation of the Boreal Mixedwood Ecoregion in this study area is approximately 860 m. Below this elevation lodgepole pine ceases to be a component of aspen stands on model sites. The dry mixedwood subregion of the ecoregion was identified by Strong and Leggat in the northern portion of the study at lower elevations. There were no vegetation differences observed in this study to substantiate this split; however, further study is required to verify its occurrence.

2.1.1 Trembling Aspen/Low-bush Cranberry/Dewberry (**Populus tremuloides/Viburnum edule/Rubus pubescens**)

Site Characteristics

Moisture regime : Submesic to subhygric
Nutrient regime : Submesotrophic to permesotrophic
Slope : 0-9
Aspect : Variable
Elevation : 650 - 825
Number of plots : 27

Soil Characteristics

Parent material : GL, M, GF, E
Texture (B horizon): Fine to coarse textured
Drainage : Well to moderately well
pH (B horizon) : 6.0 (4-8)
Soils : O.GL, GLSZ.GL, GL.GL, BR.GL, E.EB, E.OYB

This association is wide-spread over a large portion of the Mixedwood Ecoregion in the study area on level to very gently sloping topography. It represents the modal site conditions for the ecoregion although it occurs on a relatively wide range of parent materials. Because slopes are low, aspect does not have a significant influence on vegetation composition. Well to moderately well drained, medium to fine textured soils are typical. The dominant parent material is glaciolacustrine or glaciolacustrine overlain by thin veneers of eolian or glaciofluvial materials.

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
Shrub	**Rosa acicularis**	Prickly rose
	Viburnum edule	Low-bush cranberry
	Lonicera involucrata	Bracted honeysuckle

Layer	Species	
Forb	**Lathyrus ochroleucus**	Peavine
	Rubus pubescens	Dewberry
	Cornus canadensis	Bunchberry
	Fragaria virginiana	Strawberry
	Aster conspicuus	Showy aster
	Maianthemum canadense	Wild lily-of-the valley
	Galium boreale	Bedstraw
	Epilobium angustifolium	Fireweed
	Pyrola asarifolia	Pink wintergreen
	Petasites palmatus	Coltsfoot
	Linnaea borealis	Twinflower

Trembling aspen dominates the tree layer in this association with significant components of balsam poplar and white spruce also present. White spruce is often present as regeneration and it would form the overstory in climax stands on these sites. The shrub layer generally has high cover and consists primarily of rose and low-bush cranberry with bracted honeysuckle commonly occurring. The forb layer is also well developed with a variety of species present. Grass cover is moderate with hairy wild rye and Calamagrostis spp. occurring regularly. The heavy shrub and forb layer and the presence of deciduous leaf litter restricts development of the moss layer.

2.1.2 Trembling Aspen/Prickly Rose/Peavine (**Populus tremuloides/Rosa acicularis/Lathyrus ochroleucus**)

Site Characteristics

Moisture regime : Mesic to subxeric
Nutrient regime : Mesotrophic to submesotrophic
Slope : 0-10
Aspect : Variable
Elevation : 660-970
Number of plots : 6

Soil Characteristics

Parent material : E, GF
Texture (B horizon): Moderately fine to coarse
Drainage : Well to rapid
pH (B horizon) : 6.7 (6-8)
Soils : E.EB, BR.GL, O.EB, PZ.GL

This association has limited occurrence in the study area as it is restricted to drier sites with coarse-textured soils. Submesic to subxeric moisture regimes and well to rapidly drained soils are dominant. The topography ranges from level to moderately sloping although most sites occur on level topography. This association indicates drier site conditions than the Trembling Aspen/Low-bush Cranberry/Dewberry association (Section 2.1.1).

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
Shrub	**Rosa acicularis**	Prickly rose
	Spiraea betufolia	White meadowsweet
Forb	**Lathyrus ochroleucus**	Peavine
	Maianthemum canadensis	Wild lily-of-the valley
	Epilobium angustifolium	Fireweed
	Cornus canadensis	Bunchberry
	Linnaea borealis	Twinflower
	Aster conspicuus	Showy aster
	Pyrola asarifolia	Pink wintergreen
	Aralia nudicaulus	Wild sarsaparilla
	Orthilia secunda	One sided wintergreen
Grasses	**Elymus innovatus**	Hairy wild rye

Trembling aspen dominates the tree layer in this association, however, white spruce and lodgepole pine may form a significant component of the overstory. The presence of lodgepole pine indicates the drier site conditions occurring here. Rose and white meadowsweet dominate the moderately developed shrub layer. Low-bush cranberry and bracted honeysuckle cover is low while saskatoon and buffalo-berry are more common, indicating drier site conditions. The forb layer is well-developed, however, species reflecting a dry environment have greater cover than in the Aspen/Low-bush Cranberry/Dewberry association. Grasses, particularly hairy wild rye, are more prevalent. The moss layer is very poorly developed in this association.

2.1.3 Trembling Aspen-Balsam Poplar/Bracted Honeysuckle/Dewberry (**Populus tremuloides/Lonicera involucrata/Rubus pubescens**)

Site Characteristics

Moisture regime : Subhygric to subhydric
Nutrient regime : Mesotrophic to permesotrophic
Slope : 0-7
Aspect : Variable
Elevation : 640-840
Number of plots : 12

Soil Characteristics

Parent material : GL, GF, M, E, F
Texture (B horizon): Moderately fine to coarse
Drainage : Imperfect to moderately well
pH (B horizon) : 7.3 (5-8)
Soils : O.LG, O.HG, GLBR.GL, GL.EB, O.EB, GL.GL, O.GL

This association is relatively wide-spread in the area on level to gently sloping topography. Imperfect drainage conditions predominate and soils are usually either gleysols or gleyed phases of the luvisolic and brunisolic order. Parent materials and textures are variable, however, the overriding factor responsible for species composition is imperfect soil drainage and abundant soil moisture.

This association is relatively wide-spread in the area on level to gently sloping topography. Imperfect drainage conditions predominate and soils are usually either gleysols or gleyed phases of the luvisolic and brunisolic order. Parent materials and textures are variable, however, the overriding factor responsible for species composition is imperfect soil drainage and abundant soil moisture.

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
	Populus balsamifera	Balsam poplar
Shrub	**Viburnum edule**	Low-bush cranberry
	Lonicera involucrata	Bracted honeysuckle
	Rosa acicularis	Prickly rose
	Cornus stolonifera	Red-osier dogwood
Forb	**Rubus pubescens**	Dewberry
	Aralia nudicaulis	Wild sarsaparilla
	Cornus canadensis	Bunchberry

Trembling aspen and balsam poplar share dominance in the tree overstory occurring in this association. The presence of balsam poplar in significant amounts is indicative of the increased soil moisture present. Low-bush cranberry, bracted honeysuckle, rose and red osier dogwood share dominance in the well developed shrub layer. Bracted honeysuckle and red osier dogwood are indicators of moist site conditions. The forb layer is well-developed with the overall species composition reflecting the moisture status. White spruce is sporadically present as regeneration and would be expected to form the climax community on these sites. While the moist sites favor the growth of spruce, the heavy shrub and forb layers provide severe competition for white spruce seedlings which will likely slow successional rates to a significant degree.

2.1.4 Trembling Aspen/Beaked Hazelnut/Wild Sarsaparilla (**Populus tremuloides/Corylus cornuta/Aralia nudicaulis**)

Site Characteristics

Moisture regime : Mesic to submesic
Nutrient regime : Submesotrophic to permesotrophic
Slope : 0-6
Aspect : Variable
Elevation : 540-690
Number of plots : 4

Soil Characteristics

Parent materials : GF, F
Texture (B horizon): Moderately fine to coarse
Drainage : Well to moderately well
pH (B horizon) : 7.0
Soils : E.EB, CU.R, O.GL

This association occurs to a limited extent in the study area at the lower elevations of the Mixedwood Ecoregion. Its distribution appears to be limited to river valley locations on glaciofluvial and fluvial terraces with well drained conditions. The combination of slightly drier than normal site conditions for the Mixedwood region, and the warmer, lower elevation, river valley locations may be responsible for the development of this association.

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
	Picea glauca	White spruce

Layer	Species	
Shrub	**Corylus cornuta**	Beaked hazelnut
	Rosa acicularis	Prickly rose
	Amelanchier alnifolia	Saskatoon
	Viburnum edule	Low-bush cranberry
	Prunus virginiana	Choke cherry
	Symphoricarpos albus	Snowberry
Forb	**Aralia nudicaulis**	Wild sarsaparilla
	Cornus canadensis	Bunchberry
	Rubus pubescens	Dewberry
	Linnaea borealis	Twinflower
	Maianthemum canadense	Wild lily-of-the-valley
	Galium boreale	Bedstraw
	Lathyrus ochroleucus	Peavine
	Mertensia paniculata	Tall mertensia
	Petasites palmatus	Coltsfoot
Grass	**Elymus innovatus**	Hairy wild rye

Trembling aspen is dominant in the tree layer with white spruce and balsam poplar occurring sporadically. White spruce is occasionally found as regeneration indicating eventual succession to this species. The shrub layer is generally heavy with beaked hazelnut, rose and saskatoon being dominant which would indicate drier site conditions than is common for this portion of the mixedwood. Wild sarsaparilla dominates the well-developed forb layer with a variety of other species also occurring. The grass layer is poorly developed and the moss layer is almost non-existant. The overall combination of species in this association indicate that warmer, drier conditions are present at these sites.

2.1.5 Trembling Aspen/Thimbleberry/Wild Sarsaparilla
(**Populus tremuloides/Rubus parviflorus/Aralia nudicaulis**)

Site Characteristics

Moisture regime : Mesic to subhygric
Nutrient regime : Mesotrophic and permesotrophic
Slope : 2-16
Aspect : Variable
Elevation : 765-900
Number of plots : 5

Soil Characteristics

Parent material : GF, M, GL, E
Texture (B horizon): Moderately fine to coarse
Drainage : Moderately well to well
pH (B horizon) : 6.4 (6-7)
Soils : BR.GL, E.EB

This association has limited distribution in the study area on nearly level to moderate slopes with variable parent materials. Textures vary from coarse to moderately fine in the B horizon, however, there is often a change in texture, from coarse to fine, within the soil profile that acts as a restricting layer along which seepage water flows. Soils are predominantly moderately well to well drained and nutrient regimes are mesotrophic to permesotrophic. Seepage is expected to occur at these sites in periods of heavy rainfall, however it would be short-lived in duration.

Characteristic Species

Layer	Shrub	
Tree	**Populus tremuloides**	Trembling aspen
Shrub	**Rubus parviflorus**	Thimbleberry
	Viburnum edule	Low-bush cranberry
	Rosa acicularis	Prickly rose
	Spiraea betulifolia	White meadowsweet

Layer	Species	
Forbs	**Aralia nudicaulis**	Wild sarsaparilla
	Epilobium angustifolium	Fireweed
	Aster conspicuus	Showy aster
	Lathyrus ochroleucus	Peavine
	Smilacina racemosa	False Solomon's-seal
	Cornus canadensis	Bunchberry
	Rubus pubescens	Dewberry
	Mertensia paniculata	Tall mertensia
	Maianthemum canadense	Wild lily-of-the valley
Grass	**Calamagrostis stricta**	Northern reed grass

Trembling aspen is dominant in the overstory of this association, however, balsam poplar often forms a significant component. The shrub layer is very well-developed with thimbleberry dominating. Alder occurs sporadically indicating that seepage conditions are present. The forb layer is also very heavy and consists of species that indicate nutrient-rich conditions. The grass and moss layers are generally poorly developed.

This association extends to some degree into the lower portions of the Boreal Foothills, probably as a result of the moisture associated with the foothills topography.

2.1.6 Lodgepole Pine/Blueberry/Lichen (**Pinus contorta/Vaccinium myrtilloides/Cladonia** spp).

Site Characteristics

Moisture regime : Xeric to subxeric
Nutrient regime : Submesotrophic to oligotrophic
Slope : 0-5
Aspect : Variable
Elevation : 880
Number of plots : 6

Soil Characteristics

Parent materials : E, GF
Texture (B horizon): Coarse
Drainage : Well to rapidly
pH (B horizon) : 5.6 (5-6)
Soils : E.EB, E.DYB

This association has limited occurrence mainly on eolian deposits in the study area. Slopes vary from level to gentle. The association represents xeric conditions with rapidly drained soils and poor nutrient status due to the coarse parent materials.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Vaccinium myrtilloides** **Rosa acicularis**	Blueberry Prickly rose
Forb	**Vaccinium vitis-idaea** **Maianthemum canadense**	Bog cranberry Wild lily-of-the valley
Moss	**Pleurozium schreberi**	Schreber's moss
Lichen	**Cladina mitis**	Reindeer moss

Lodgepole pine is dominant in the open tree layer. Aspen and white spruce occur occasionally, however, lodgepole pine is expected to remain dominant over time as this association can be considered an edaphic climax. The shrub and forb layers have low cover due to the xeric conditions present at these sites. **Vaccinium** species and bearberry are present in these layers indicating the dry, acidic environment. The moss layer has very low cover in this association while the lichen layer is better developed than in other associations.

2.1.7 Lodgepole Pine/Feathermoss (**Pinus contorta/Pleurozium schreberi**)

Site Characteristics

Moisture regime : Subxeric to submesic
Nutrient regime : Submesotrophic to mesotrophic
Slope : 0
Aspect :
Elevation : 805-845
Number of plots : 7

Soil Characteristics

Parent material : GF, E, F
Texture (B horizon): Coarse to moderately fine
Drainage : Well to rapid
pH (B horizon) : 5.0-7.0-
Soils : E.EB, BR.GL, PZ.GL

This association occurs to a limited extent in the study area on well to rapidly drained level glaciofluvial deposits. Moisture regimes are usually subxeric and nutrient regimes submesotrophic, with mesotrophic conditions occurring on the finer textured materials. Soil moisture holding capacity is somewhat greater on sites supporting this association than on sites supporting the Pine/Blueberry/Lichen association due to generally finer soil textures.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Vaccinium myrtilloides** **Rosa acicularis** **Ledum groenlandicum**	Blueberry Prickly rose Labrador tea
Forb	**Linnaea borealis** **Cornus canadensis** **Vaccinium vitis-idaea**	Twinflower Bunchberry Bog cranberry

Layer	Species	
Grass	**Elymus innovatus**	Hairy wild rye
Moss	**Pleurozium schreberi** **Hylocomium splendens** **Ptilium crista-castrensis**	Schreber's moss Stair-step moss Knights plume moss
Lichen	**Peltigera aphthosa**	Studded-leather lichen

Lodgepole pine dominates the tree canopy in this association with trembling aspen, black spruce and white spruce occurring sporadically. Black spruce is relatively common as regeneration in this association indicating probable succession toward this species. The shrub layer is moderate with ericaceous shrubs dominating. Buffalo-berry is present with high cover at some of the sites. The forb layer has low species diversity and cover as has the grass layer. The moss layer is generally well developed with feathermosses dominating.

The species composition of this association reflects the dry nature of the sites where it occurs. However, the shrub, forb and moss layers are better developed than the Lodgepole Pine/Blueberry/Lichen association previously discussed.

2.1.8 Lodgepole Pine/Low-bush Cranberry/Wild Sarsaparilla (**Pinus contorta/Viburnum edule/Aralia nudicaulis**)

Site Characteristics

Moisture regime : Mesic to submesic
Nutrient regime : Submesotrophic to mesotrophic
Slope : 4-12
Aspect : Northerly
Elevation : 780-820
Number of plots : 3

Soil Characteristics

Parent material : E, F
Texture (B horizon): Moderately fine to coarse
Drainage : Well
pH (B horizon) : 6.3 (6-7)
Soils : E.EB, BR.GL

This association is found to a limited extent in the study area on very gentle to moderate slopes. Parent materials are eolian veneers over glaciofluvial deposits and fluvial deposits. Moisture regimes are slightly more mesic than the Pine/Feathermoss or Pine/Blueberry/Lichen association as the soils are somewhat finer textured and sites are generally north-facing. These sites may also be receiving some seepage water from upslope as they occur in mid-slope positions.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Viburnum edule**	Low-bush cranberry
	Rosa acicularis	Prickly rose
	Spiraea betulifolia	White meadowsweet
	Picea glauca	White spruce
Forb	**Aralia nudicaulis**	Wild sarsaparilla
	Cornus canadensis	Bunchberry
	Linnaea borealis	Twinflower
	Maianthemum canadense	Wild lily-of-the-valley
	Pyrola asarifolia	Pink wintergreen
	Galium triflorus	Sweet-scented bedstraw
	Viola renifolia	Kidney-leaved violet
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knights plume moss

Lodgepole pine dominates the tree layer in this association with white spruce and trembling aspen commonly occurring. White spruce regeneration is often present indicating succession toward stands dominated by this species. The shrub layer is well-developed with low-bush cranberry, prickly rose and white meadowsweet dominating. White birch, alpine fir and wild red raspberry are often present as well in the shrub layer. The forb layer is moderately well developed with a variety of species occurring. The moss layer is relatively light possibly as a result of dry surface layers in the soil profile.

This association represents a transition from the aspen associations to the pine associations in the Mixedwood Ecoregion. The understory vegetation more closely resembles that of aspen communities than pine communites while the presence of lodgepole pine indicates somewhat drier than mesic conditions.

2.1.9 Black Spruce-Lodgepole Pine/Labrador Tea/Feathermoss (**Picea mariana-Pinus contorta/Ledum groenlandicum/Pleurozium schreberi**)

Site Characteristics

Moisture regime : Subhygric
Nutrient regime : Submesotrophic
Slope : 0-5
Aspect : Variable
Elevation : 805-850
Number of plots : 7

Soil Characteristics

Parent material : GF, E, M
Texture (B horizon): Fine to coarse
Drainage : Moderately well to imperfect
pH (B horizon) : 6.4 (5-7)
Soils : GLBR.GL, BR.GL, O.LG, GL.EB, GL.GL

This association occurs to a limited extent on level to very gently sloping topography in lower slope positions in the Boreal Mixedwood. Subhygric moisture conditions and moderately well to imperfect drainage conditions are characteristic. The soils often have finer textured lower horizons which impede percolation of water and compensate for the coarse texture often found in the upper horizons. Seepage is often present as well. The soils are generally gleyed phases of luvisolic soils or gleysols.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
	Pinus contorta	Lodgepole pine
Shrub	**Ledum groenlandicum**	Labrador tea
	Picea mariana	Black spruce
	Vaccinium myrtilloides	Blueberry
	Rosa acicularis	Prickly rose
	Lonicera involucrata	Bracted honeysuckle
Forb	**Cornus canadensis**	Bunchberry
	Linnaea borealis	Twinflower
	Vaccinium vitis-idaea	Bog cranberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss

This association is characterized by moderately well stocked stands of black spruce and lodgepole pine. The shrub layer is variable in cover (well to poorly developed); labrador tea is the most abundant constant species. Bunchberry, twinflower and bog cranberry are constant species with low cover in the forb layer which in general exhibits low cover values. Grasses and graminoids are present but with low constancy and very low coverage. The moss layer is well-developed and feathermosses are dominant. The plant species occurring in this association are generally associated with acidic, moist habitats.

Stands belonging to this association are relatively young (45-87 years). Black spruce regeneration is good and pine regeneration is very poor, indicating that in the absence of fire or other disturbance nearly pure stands of black spruce may develop.

2.1.10 White Spruce/Bracted Honeysuckle/Dewberry (**Picea glauca/Lonicera involucrata/Rubus pubescens**)

Site Characteristics

Moisture regime : Hygric to mesic
Nutrient regime : Mesotrophic to permesotrophic
Slope : 0-5
Aspect : Northerly
Elevation : 695-805
Number of plots : 5

Soil Characteristics

Parent material : GF, M, F
Texture (B horizon): Moderately fine to fine
Drainage : Imperfect
pH (B horizon) : 5.6 (5-7)
Soils : O.LG, GL.GL, GLBR.GL, E.EB

This association occurs sporadically in the study area on level to gently sloping topography. Imperfect drainage conditions and subhygric moisture regimes are most common. Soils are generally gleysols or gleyed phases of luvisolic soils. The association can be found on a variety of parent materials, however, the moisture and nutrient regimes are the overriding factors controlling its distribution.

Characteristic Species

Layer	Species	
Tree	**Picea glauca**	White spruce
	Populus tremuloides	Trembling aspen
Shrub	**Lonicera involucrata**	Bracted honeysuckle
	Viburnum edule	Low-bush cranberry
	Rosa acicularis	Prickly rose
Forb	**Cornus canadensis**	Bunchberry
	Rubus pubescens	Dewberry
	Mitella nuda	Bishop's cap
	Linnaea boealis	Twinflower
Moss	**Ptilium crista-castrensis**	Knight's plume moss
	Pleurozium schreberi	Schreber's moss
	Hylocomium splendens	Stair-step moss

White spruce dominates the tree layer with trembling aspen and balsam or alpine fir commonly occurring. Regeneration is by white spruce and balsam or alpine fir indicating future succession to these species. The shrub layer generally has low cover and the species composition reflects the moist site conditions (for example, bracted honeysuckle as a dominant shrub reflects abundant soil moisture). The forb layer has moderate cover as does the moss layer.

2.1.11 Black Spruce/Labrador Tea/Feathermoss
(**Picea mariana/Ledum groenlandicum/Pleurozium schreberi**)

Site Characteristics

Moisture regime : Subhydric to hygric
Nutrient regime : Submesotrophic to mesotrophic
Slope : 0-1
Aspect :
Elevation : 695-850
Number of plots : 6

Soil Characteristics

Parent material : O, GL
Texture (B horizon): Moderately fine to fine
Drainage : Imperfect to very poor
pH (C horizon) : 7.0 (6-8)
Soils : T.M, O.LG

This association occurs commonly in the Boreal Mixedwood on nearly level to level depressional areas. Moisture regimes are generally subhydric with Terric Mesisols and Gleysols as common soils. Nutrient regimes are expected to be somewhat poorer than mesic. The high water table is the limiting factor to tree growth.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
Shrub	**Ledum groenlandicum**	Labrador tea
	Lonicera involucrata	Bracted honeysuckle
Forb	**Linnaea borealis**	Twinflower
	Equisetum scirpoides	
	Vaccinium vitis-idaea	Bog cranberry
	Cornus canadensis	Bunchberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocimium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss

The tree layer is generally well-developed in this association. However, the growth is usually stunted due to the high water table. Black spruce is the dominant species with lodgepole pine and tamarack occurring occasionally. The shrub layer is moderately heavy with labrador tea as the dominant species. Bracted honeysuckle and prickly rose occur commonly but with lower constancy than labrador tea. The forb layer is generally sparse and includes a variety of species indicative of moist conditions. The moss layer is heavy with feathermosses dominating. Sphagnum mosses occur sporadically with generally low cover, except on the wettest, most poorly drained sites where cover is relatively high.

2.1.12 Tamarack-Black Spruce/Sedge/Sphagnum (**Larix laricina-Picea mariana/Carex** spp. **/Sphagnum** spp.)

Site Characteristics

Moisture regime	:	Subhydric to hydric
Nutrient regime	:	Mesotrophic to permesotrophic
Slope	:	0
Aspect	:	
Elevation	:	705-815
Number of plots	:	5

Soil Characteristics

Parent materials	:	Organic
Texture (B horizon)	:	Mesic
Drainage	:	Poor to very poor
pH (B horizon)	:	Not collected
Soils	:	TY.M, O.G

This association is common on level, depressional topography in the Boreal Mixedwood. The water table is close to the surface at these sites therefore very poor drainage and subhydric to hydric moisture regimes are common. The nutrient regimes are usually slightly richer than mesic due to mineral rich seepage water being received. Soils are usually organic, however, gleysols may be encountered occasionally.

Characteristic Species

Layer	Species	
Tree	**Larix laricina**	Tamarack
	Picea mariana	Black spruce

Layer	Species	
Shrub	**Salix** spp.	Willow
Grass	**Carex** spp.	Sedge
Moss	**Shagnum** spp.	

The species composition of this association is variable and closely related to the amount of water present near the surface over the year. All vegetation layers tend to be poorly developed with the exception of the moss layer which generally has heavy cover. The presence of tamarack as a codominant with black spruce indicates that sites receive more nutrients than black spruce dominated bogs.

2.1.13 White Spruce/Prickly Rose/Hairy Wild Rye (**Picea glauca/Rosa acicularis/Elymus innovatus**)

Site Characteristics

Moisture regime : Submesic, subxeric
Nutrient regime : Submesotrophic
Slope : 0-9
Aspect : Variable
Elevation : 680, 715
Number of plots : 2

Soil Characteristics

Parent material : E, GF
Texture (B horizon): Moderately coarse
Drainage : Well to rapid
pH (B horizon) : 5.5 (5-6)
Soil : PZ.GL, E.DYB

This association occurs to a limited extent on dry sites in the Boreal Mixedwood within the study area. Moisture regimes are submesic to subxeric with well to rapidly drained soils. Soils are Podzolic Grey Luvisols and Eluviated Dystric Brunisols, both of which are uncommon in the ecoregion except on coarser textured deposits.

Characteristic Species

Layer	Species	
Tree	**Picea glauca**	White spruce
Shrub	**Rosa acicularis**	Prickly rose Picea
	Picea glauca	White spruce
Forb	**Linnaea borealis**	Twinflower
	Cornus canadensis	Bunchberry
	Epilobium angustifolium	Fireweed
	Galium boreale	Northern bedstraw
	Lathyrus ochroleucus	Peavine
	Maianthemum canadense	Wild lily-of-the-valley
Grass	**Elymus innovatus**	Hairy wild rye
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss

The tree canopy is generally open in this white spruce dominated association. Lodgepole pine, trembling aspen, balsam poplar and white birch can all be expected to occur sporadically in association with the spruce. The shrub layer is generally moderate with a variety of species occurring. Forb and grass cover is also moderate with a relatively wide diversity of species due to the open nature of the stand. Moss cover is generally low in comparison to other white spruce-dominated associations. This is due to the xeric nature of the sites.

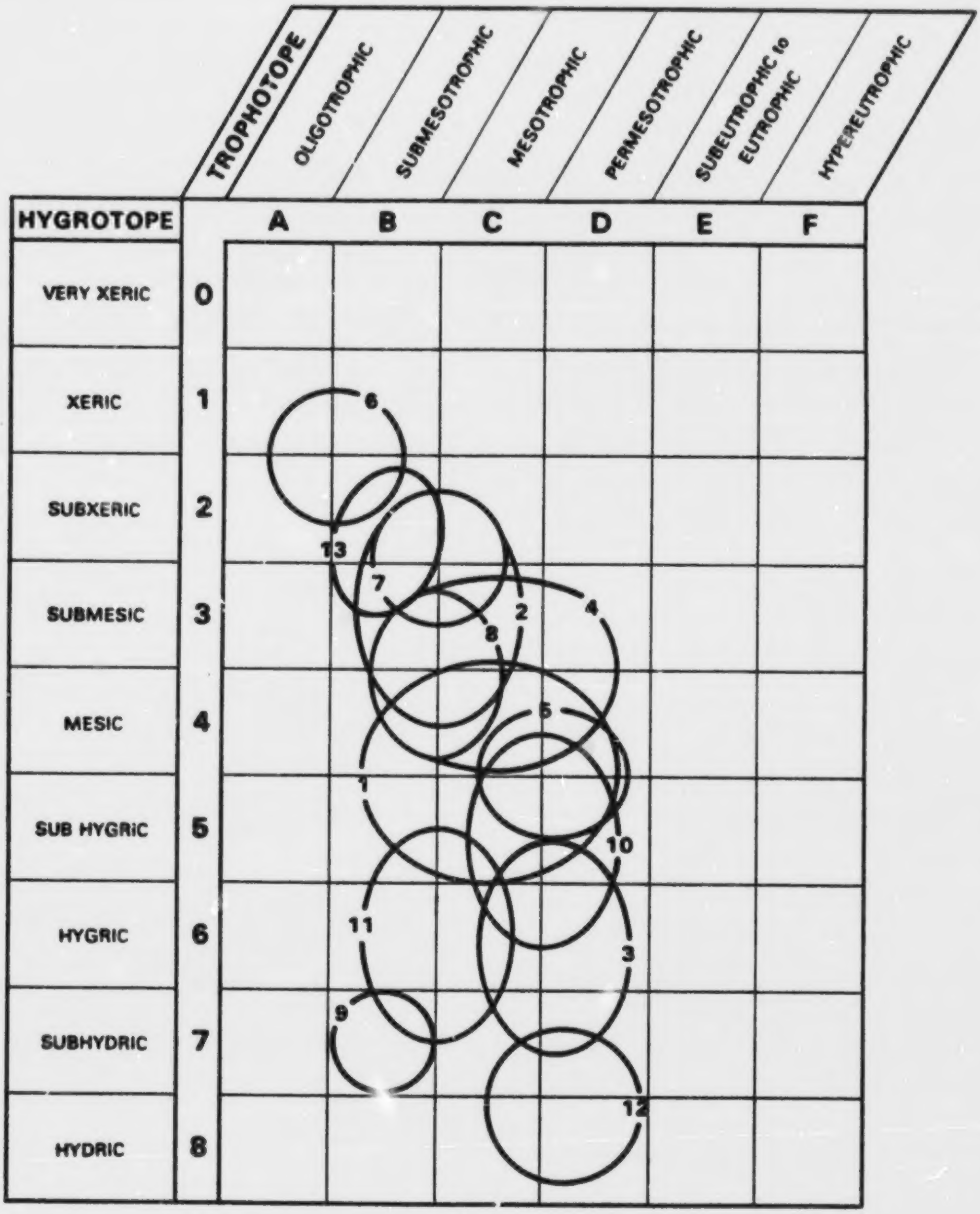
This association occurs under similar conditions as the Lodgepole Pine/Blueberry/Lichen and the Trembling Aspen/Prickly Rose/Peavine associations. Fire history and seed source are thought to influence the tree species that regenerate after fire on these sites.

2.1.14 Discussion

The distribution of plant associations in the Boreal Mixedwood Ecoregion in the study area is largely controlled by soil drainage which is related to soil texture and parent materials. Microclimatic factors such as those caused by aspect, do not have a significant role in controlling plant distribution. A moisture-nutrient grid (Figure 150) shows the relationships between associations

The Aspen/Low-bush Cranberry/Dewberry association, which is successional to the White Spruce/Bracted Honeysuckle/Dewberry association, represents modal sites in the ecoregion. The Aspen-Balsam Poplar/Bracted Honeysuckle/Dewberry and Aspen/Thimbleberry/Wild Sarsaparilla associations occur on slightly moister locations, with the latter commonly related to seepage conditions. The Aspen/Prickly Rose/Peavine association represents slightly drier than modal conditions. Coarser textured veneers of eolian or glaciofluvial often overlie finer textured materials at these sites. The Aspen/Beaked Hazelnut/Wild Sarsaparilla association occurs on near modal sites, however, it is usually confined to river valleys at lower elevations where temperatures may be somewhat warmer.

Well and rapidly drained sites with coarse textured eolian and glaciofluvial materials support lodgepole pine forest. The Lodgepole Pine/Blueberry/Lichen association occurs on the driest sites while Lodgepole Pine/Feathermoss is more common on subxeric locations. The Lodgepole Pine/Low-bush Cranberry/Wild Sarsparilla associations occur on near mesic conditions. Coarse-textured materials overlie finer-textured


TROPHOTOPE
OLIGOTROPHIC
SUBMESOTROPHIC
MESOTROPHIC
PERMESOTROPHIC
SUBEUTROPHIC to EUTROPHIC
HYPEREUTROPHIC
HYGROTOPE
A
B
C
D
E
F
VERY XERIC
0
XERIC
1
SUBXERIC
2
SUBMESIC
3
MESIC
4
SUB HYGRIC
5
HYGRIC
6
SUBHYDRIC
7
HYDRIC
8
6
13
7
2
4
8
5
1
10
11
3
9
12

1. Trembling aspen / Low-bush cranberry / Dewberry
2. Trembling aspen / Prickly rose / Peavine
3. Trembling aspen - Balsam poplar / Bracted honeysuckle / Dewberry
4. Trembling aspen / Beaked hazelnut / Wild sarsaparilla
5. Trembling aspen / Thimbleberry / Wild sarsaparilla
6. Lodgepole pine / Blueberry / Lichen
7. Lodgepole pine / Feathermoss
8. Lodgepole pine / Low-bush cranberry / Wild sarsaparilla
9. Black spruce - Lodgepole pine / Labrador tea / Feathermoss
10. White spruce / Bracted honeysuckle / Dewberry
11. Black spruce / Labrador tea / Feathermoss
12. Tamarack - Black spruce / Sedge / Sphagnum
13. White spruce / Prickly rose / Hairy wild rye

Figure 150: Moisture and Nutrient Regimes for Plant Associations in the Boreal Mixedwood Ecoregion

deposits at these sites which improves the moisture holding capacity and allows more diverse shrub and herb understories to develop.

The three black spruce-dominated associations occur on imperfectly to poorly drained sites. The Black Spruce-Lodgepole Pine/Feathermoss associations represent imperfectly drained conditions with Black Spruce/Labrador Tea/Feathermoss being poorly drained and Tamarack-Black Spruce/Sedge/Sphagnum representing the very poorly drained sites.

2.2 Boreal Foothills

The Boreal Foothills Ecoregion (Ecoregion 9, Strong and Leggat, 1982) occupies a relatively narrow band trending northwest to southeast across the study area (Figure 2, Vol. I). It occurs elevationally above the Boreal Mixedwood Ecoregion from approximately 860 m to 1 060 m asl.

The ecoregion represents an ecotone between Boreal and Cordilleran vegetation which is reflected in the change from deciduous dominated to coniferous dominated forests. The climate of the ecoregion results from both boreal and cordilleran influences. The boreal influence produces a summer high precipitation regime while the Cordilleran influence results in increased winter temperature and precipitation compared to the Boreal Mixedwood. Specific climatic parameters for climatic stations within the study area are shown in Appendix E.

The topography consists of undulating to rolling plateau remnants. Glacial till is the dominant surficial material.

Aspen, lodgepole pine and white spruce occur interchangeably or in mixtures on moderately well drained modal sites in the ecoregion. The deciduous component usually dominates at the lower elevations while lodgepole pine is more prevalent in the upper portions. Understory vegetation in younger stands consists of well developed shrub and herb layers dominated by low-bush cranberry and wild sarsaparilla, respectively. Secondary succession is to white spruce with understory species diversity and density decreasing in the older stands.

Rapidly and well-drained sites are usually vegetated by lodgepole pine which can tolerate dry conditions. Understory species include lichens which reflect the dry site conditions. Soils are generally poorly developed Brunisols.

Imperfectly drained sites are dominated by lodgepole pine and black spruce with succession to black spruce. Understory vegetation is dominated by mosses and labrador tea. Common soils are Gleyed Luvisols and Gleysols.

There are eight associations identified for the ecoregion in the study area. Of these three occur on modal sites, four represent wetter site conditions and one is characteristic of rapid drainage.

The mapping criteria used for delineating the Boreal Foothills ecoregion in this study are based on the modal site concept. At the upper elevations, the Lodgepole pine/Low-bush cranberry/Wild sarsaparilla association predominates. These stands usually have a component of aspen in the overstory which becomes restricted to scattered clones near the upper elevation limits. Modal sites at lower elevations characteristically support the Aspen/Low-bush cranberry/Wild sarsaparilla association which has a pine component in the overstory. A very similar association occurs in the Boreal Mixedwood, however, pine is generally absent.

2.2.1 Lodgepole Pine/Low-Bush Cranberry/Wild Sarsaparilla (**Pinus contorta/Vibrunum edule/Aralia nudicaulis**)

Site Characteristics

Moisture regime : Submesic to hygric
Nutrient regime : Submesotrophic to permesotrophic
Slope : 0-17%
Aspect : Variable
Elevation : 880-1 090
Number of plots : 13

Soil Characteristics

Parent materials : M, X, GF
Texture (B horizon): Moderately fine to medium
Drainage : Well to imperfect
pH (B horizon) : 5.7 (4.6-8)
Soils : BR.GL, O.GL, E.DYB, E.EB, GL.GL, GLE.DYB

This association is wide-spread through the Boreal Foothills Ecoregion in the study area but is more prevalent at the upper elevations. It occurs on level to strongly sloping topography on morainal deposits. The moisture regime is predominantly mesic although a significant number of sites are subhygric. Soils are usually moderately well or well drained.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Viburnum edule**	Low-bush cranberry
	Rosa acicularis	Prickly rose
	Spiraea betulifolia	White meadowsweet
Forb	**Cornus canadensis**	Bunchberry
	Linnaea borealis	Twinflower
	Aralia nudicaulis	Wild sarsaparilla
	Rubus pubescens	Dewberry
	Maianthemum canadense	Wild lily-of-the-valley
	Epilobium angustifolium	Fireweed
	Mitella nuda	Bishop's cap
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilium crista-castrinois	Knight's plume moss
	Hylocomium splendens	Stair-step moss

Lodgepole pine dominates the tree layer in this association with trembling aspen and white spruce often occurring as well. The distribution of aspen is reduced to scattered clones within the pine forest at the upper elevations of the association. White spruce is relatively common in the shrub layers indicating the successional trend. The shrub layer is well developed and contains species indicative of Boreal conditions, i.e. low-bush cranberry, rose and meadowsweet. Devil's club (**Oplopanax horridum**) is occasionally present in this association. It is usually confined to seepage tracks along slopes and is therefore an indicator of seepage conditions. The forb layer is well developed also, with bunchberry, twinflower and wild sarsaparilla being most common. The grass layer has light cover while the moss layer is variable but generally only moderately developed. This is probably due to the well developed forb and shrub layers.

2.2.2 Trembling Aspen/Low-bush Cranberry/Wild sarsaparilla (**Populus tremuloides/Viburnum edule/Aralia nudicaulis**)

Site Characteristics

Moisture regime: Hygric to submesic
Nutrient regime: Eutrophic to submesic
Slope : 1-37%
Aspect : Variable
Elevation : 900-1 085
Number of plots: 4

Soil Characteristics

Parent material: M, GF
Texture : Moderately fine to medium
Drainage : Well to imperfect
pH (B horizon) : 6.5 (5-8)
Soils : GL.GL, O.HR, BR.GL

This association is relatively common at lower elevations in the Boreal Foothills Ecoregion. It occurs on nearly level to very strongly sloping topography on hygric to mesic moisture regimes. Seepage is often present; the mineral-rich groundwater originating upslope probably contributes to eutrophic nutrient regimes. Soils are often imperfectly drained although the association can also be expected on well-drained sites.

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
	Populus balsamifera	Balsam poplar
Shrub	**Viburnum edule**	Low-bush cranberry
	Rosa acicularis	Prickly rose
	Alnus crispa	Green alder
	Spiraea betulifolia	White meadowsweet
	Amelanchier alnifolia	Saskatoon
	Lonicera involucrata	Bracted honeysuckle
	Rubus idaeus	Wild red raspberry

Forb	**Aralia nudicaulis**	Wild sarsaparilla
	Rubus pubescens	Dewberry
	Cornus canadensis	Bunchberry
	Mitella nuda	Bishop's cap
	Epilobium angustifolium	Fireweed
	Petasites palmatus	Coltsfoot
	Pyrola asarifolia	Pink wintergreen
	Aster conspicuus	Showy aster
	Mertensia paniculata	Tall mertensia
	Elymus innovatus	Hairy wild rye

Trembling aspen is dominant in the tree layer with balsam poplar occurring frequently. White spruce is present sporadically as regeneration and would be expected to form the climax association. The shrub layer is generally heavy and is dominated by low-bush cranberry and rose. Green alder is often present, probably as a result of seepage. The forb layer is also well developed with wild sarsaparilla and dewberry being the most abundant species. The grass and moss layers are poorly developed with low cover.

2.2.3 White Spruce/Low-bush Cranberry/Dewberry
(**Picea glauca/Viburnum edule/Rubus pubescens**)

Site Characteristics

Moisture regime : Hygric to mesic
Nutrient regime : Submesotrophic to permesotrophic
Slope : 3-11%
Elevation : 870-975
Number of plots : 6

Soil Characteristics

Parent material : M, F, GF
Texture (B horizon): Moderately fine to coarse
Drainage : Well to imperfect
pH (B horizon) : 6.3 (5-8)
Soils : GLBR.GL, O.LG, O.G, O.GL

This association is relatively uncommon in the Boreal Foothills due to the extensive fire history of the area, and the fact that it represents a later successional stage. It occurs on very gently to moderately sloping generally north-facing topography. Drainage conditions and moisture regimes are variable; however, imperfectly to moderately well drained soils and subhygric moisture regimes are common. Soils are usually Gleyed Luvisols or Gleysols. Seepage is likely a common feature of communities belonging to this association.

Characteristic Species

Layer	Species	
Tree	**Picea glauca**	White spruce
Shrub	**Viburnum edule**	Low-bush cranberry
	Lonicera involucrata	Bracted honeysuckle
	Rosa acicularis	Prickly rose
Forb	**Linnaea borealis**	Twinflower
	Cornus canadensis	Bunchberry
	Rubus pubescens	Dewberry
	Mitella nuda	Bishop's cap
	Petasites palmatus	Coltsfoot
	Aralia nudicaulis	Wild sarsaparilla
Moss	**Hylocomium splendens**	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss
	Pleurozium schreberi	Schreber's moss

This association is dominated by white spruce and balsam poplar with alpine fir occurring sporadically. The shrub layer is moderately well-developed with rose, bracted honeysuckle and low-bush cranberry occurring in varying proportions. The forb layer also has moderate cover; however, the moss layer is well-developed at most sites with stair-step moss dominating. The abundant moss layer is indicative of the moist mesoclimate created by the coniferous overstory.

2.2.4 Lodgepole Pine/Labrador Tea/Lichen
(**Pinus contorta/Ledum groenlandicum/Cladonia** spp.)

Site Characteristics

Moisture regime : Submesic to subxeric
Nutrient regime : Submesotrophic to mesotrophic
Slope : 0-8
Aspect : Variable
Elevation : 905-1 000
Number of plots : 6

Soil Characteristics

Parent material : GF, E, M, F
Texture (B horizon): Moderately fine to coarse
Drainage : Well to rapid
pH (B horizon) : 5.5 (4.8-6)
Soils : BR.GL, E.DYB, E.EB, O.GL

This association is found on generally coarse-textured materials in the Boreal Foothills Ecoregion. Slopes range from level to gently sloping. The soil moisture regime varies from submesic to subxeric and soils are well to rapidly drained.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Ledum groenlandicum** **Vaccinium myrtilloides**	Labrador tea Blueberry
Forb	**Cornus canadensis** **Linnaea borealis** **Vaccinium vitis-idaea**	Bunchberry Twinflower Bog cranberry
Moss	**Pleurozium schreberi** **Cladina mitis**	Schreber's moss Reindeer moss

Lodgepole pine-dominated stands have an understory of labrador tea in the shrub layer, a sparse ground cover of forbs and a moderate cover of feathermoss and lichen, characterize this association. Although black spruce occurs occasionally in the understory, regeneration appears to be poor suggesting that this association constitutes an edaphic climax in the Boreal Foothills Ecoregion on dry, well-drained sites.

2.2.5 Lodgepole Pine-Black Spruce/Labrador Tea/Feathermoss (**Pinus contorta/Picea mariana/Ledum groenlandicum/Pleurozium schreberi**)

Site Characteristics

Moisture regime : Mesic to subhygric
Nutrient regime : Mesotrophic to submesorophic
Slope : 0-13
Aspect : Variable
Elevation : 905-1 060
Number of plots : 16

Soil Characteristics

Parent material : M, GF, F
Texture (B horizon): Moderately fine textured
Drainage : Well to imperfect
pH (B horizon) : 5.4 (4.3-7)
Soils : BR.GL, GLBR.GL, O.LG

This association occurs to a limited extent in the Boreal Foothills Ecoregion on level to moderately sloping topography, usually in depressional and valley bottom locations. Soil texture in the B horizon is moderately fine. The soils have a mesic to subhygric moisture regime and are well to imperfectly drained. Gleying and seepage are present at some sites.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
	Pinus contorta	Lodgepole pine
Shrub	**Ledum groenlandicum**	Labrador tea
	Rosa acicularis	Prickly rose
	Vaccinium myrtilloides	Blueberry

Forb	**Cornus canadensis**	Bunchberry
	Linnaea borealis	Twinflower
	Vaccinium vitis-idaea	Bog cranberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss

Lodgepole pine and black spurce share dominance in this association. Black spruce would be expected to eventually become the dominant in these stands particularly on the wetter sites, as it is regenerating under the existing canopy. The shrub layer is moderately developed with labrador tea, rose and blueberry occurring frequently. The forb and grass layers are very sparse. The moss layer is heavy with Schreber's moss as the dominant species.

2.2.6 Black spruce/Feathermoss
(**Picea mariana/Hylocomium splendens**)

Site Characteristics

Moisture regime : Hygric to subhydric
Nutrient regime : Submesotrophic
Slope : 0-1%
Aspect :
Elevation : 965-1 010
Number of plots : 3

Soil Characteristics

Parent material : L, O
Texture (B horizon): Not collected
Drainage : Poor to very poor
pH (B horizon) : Not collected
Soil : T.M

The association occurs to a limited extent in level valley bottom locations where seepage water collects. Drainage is poor to very poor and moisture regimes are hygric to subhydric. Organic soils may develop at these sites, however, gleysols can also be expected.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
Shrub	**Ledum groenlandicum** **Lonicera involucrata**	Labrador tea Bracted honeysuckle
Forb	**Petasites palmatus** **Mitella nuda** **Equisetum scirpoides**	Coltsfoot Bishop's cap Horsetail
Moss	**Hylocomium splendens** **Pleurozium schreberi** **Ptilium crista-castrensis**	Stair-step moss Schreber's moss Knight's plume moss
Lichen	**Cladina mitis**	Reindeer lichen

Black spruce is the dominant tree species with lodgepole pine occurring infrequently in this association. Black spruce is expected to form the climax. The shrub layer is poorly developed with only labrador tea and bracted honeysuckle occurring as constant species. The forb and grass layers are also very sparse, however, the species that occur indicate wet conditions. Feathermosses are constant with high cover in the moss layer, where localized sphagnum patches also occur.

2.2.7 Tamarack-Black Spruce/Dwarf Birch/Sphagnum spp. (**Larix laricina-Picea mariana/Betula glandulosa/Sphagnum** spp.

Site Characteristics

Moisture regime : Hydric
Nutrient regime : Permesotrophic
Slope : 0%
Aspect :
Elevation : 985-1 065
Number of plots : 2

Soil Characteristics

Parent material : Organic
Texture (B horizon): Mesisol
Drainage : Very poorly
pH (B horizon) : 8.0
Soils : HY.M

This association occurs to a limited extent in the Boreal Foothills Ecoregion on organic deposits. Sites generally receive nutrient rich seepage water from surrounding materials which increases the nutrient status; however, the high water table limits plant growth.

Characteristic Species

Layer	Species	
Tree	**Larix laricina**	Tamarack
Shrub	**Betula glandulosa**	Dwarf birch
Forb	**Smilacina trifolia**	Three-leaved Solomon's -seal
	Oxycoccus miciocarpa	Small bog cranberry
Grass	**Carex** spp.	Sedge
Moss	**Sphagnum** spp.	Sphagnum

The tree layer is poorly developed in this association with stunted tamarack and occasional black spruce occurring in very open stands. Consequently, tamarack which is a shade intolerant species, is able to regenerate well at these sites. The shrub layer is well-developed with dwarf birch being dominant and tamarack and willow also occuring. The forb layer is generally sparse with three-leaved Solomon's-seal and small bog cranberry being the only constant species. A few sedge species occur in the grass layer while sphagnum mosses are abundant in the moss layer.

2.2.8 White Spruce/Horsetail
(**Picea glauca/Equisetum spp.**)

Site Characteristics

Moisture regime : Subhygric to subhydric
Nutrient regime : Permesotrophic-mesotrophic
Slope : 0-4%
Aspect : Variable
Elevation : 550-1 230
Number of plots : 7

Soil Characteristics

Parent materials : M, F
Texture (B horizon): Medium
Drainage : Well to poor
pH (B horizon) : 8.0
Soils : O.LG, O.G. O.HG, CU.R

This association occurs to a limited extent in the study area on level to very gently sloping depressional and lower slope positions. They are often associated with fluvial systems. These sites receive nutrient-rich seepage water from upslope. Soils are often gleyed due to the high water table and poor drainage.

Characteristic Species

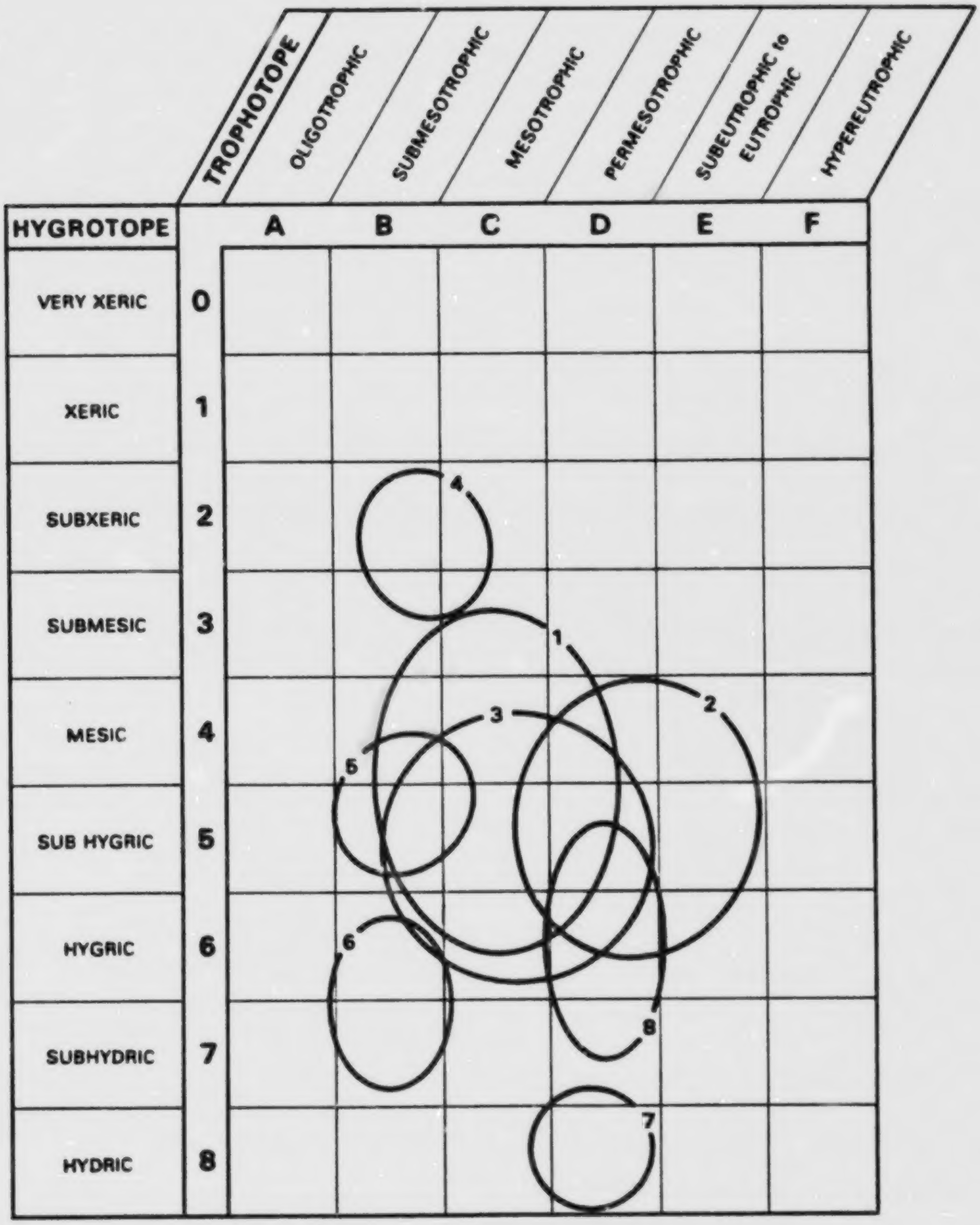
Layer	Species	
Tree	**Picea glauca**	White spruce
Shrub	**Rosa acicularis**	Prickly rose
	Lonicera involucrata	Bracted honeysuckle
Forb	**Equisetum arvense**	Horsetail
	Linnaea borealis	Twinflower
	Rubus pubescens	Dewberry
	Cornus canadensis	Bunchberry
	Mertensia paniculata	Tall mertensia
	Mitella nuda	Bishop's cap
Moss	**Hylocomium splendens**	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss
	Pleurozium schreberi	Schreber's moss

White spruce-dominated stands with an open shrub layer, a forb layer predominantly composed of horsetail and a well-developed feathermoss layer characterize the white spruce-horsetail asociation. Regeneration is generally poor, however, the best regeneration appears to be associated with moderately well to well-drained soils derived from fluvial parent materials.

This association which occurs in the Boreal Mixedwood and Boreal Uplands as well as the Boreal Foothills is a edaphic climax; soil drainage and moisture probably influence community development more than the regional climate.

2.2.9 Discussion

The distribution of vegetation associations in the Boreal Foothills is generally controlled by drainage conditions and, to some extent, by climate. An edatophic grid showing moisture and nutrient status for each association is shown in Fig. 151. The three modal associations; Lodgepole pine/Low-bush cranberry/Wild sarsaparilla, Trembling aspen/Low-bush cranberry/Wild sarsaparilla, and White spruce/Low-bush cranberry/Dewberry all occupy similar site conditions. However, there are some notable differences. The White spruce/Low-bush cranberry/Dewberry is more common on wetter sites due to the more rapid succession to spruce on these sites and probably a lower incidence of fires. The Lodgepole pine/Low-bush cranberry/Wild sarsaparilla association is more common at the higher elevations of the ecoregion where it grades into the less species diverse associations of the Boreal Uplands. The cooler climatic conditions at the higher elevation are


TROPHOTOPE
OLIGOTROPHIC
SUBMESOTROPHIC
MESOTROPHIC
PERMESOTROPHIC
SUBEUTROPHIC to EUTROPHIC
HYPEREUTROPHIC
HYGROTOPE
A
B
C
D
E
F
VERY XERIC
0
XERIC
1
SUBXERIC
2
SUBMESIC
3
MESIC
4
SUB HYGRIC
5
HYGRIC
6
SUBHYDRIC
7
HYDRIC
8
4
1
2
3
5
6
8
7

1. Lodgepole pine / Low - bush cranberry / Wild sarsaparilla
2. Trembling aspen / Low - bush cranberry / Wild sarsaparilla
3. White spruce / Low - bush cranberry / Wild sarsaparilla
4. Lodgepole pine / Labrador tea / Lichen
5. Lodgepole pine - Black spruce / Labrador tea / Feathermoss
6. Black spruce / Feathermoss
7. Tamarack - Black spruce / Dwarf birch / Sphagnum
8. White spruce / Horsetail

Figure 151: Moisture and Nutrient Regimes for Plant Associations in the Boreal Foothills Ecoregion

thought to be the most important factor controlling the distribution of this association. The Aspen/Low-bush cranberry/Wild sarsaparilla association, which is most prevalent at the lower elevations, represents a transition to the Boreal Mixedwood Ecoregion. Species composition is very similar to the modal aspen associations in the Boreal Mixedwood except for the common occurrance of lodgepole pine in aspen stands.

The Lodgepole pine-Black spruce/Labrador tea/Feathermoss, Black spruce/Feathermoss and Tamarack-Black Spruce/Dwarf birch/Sphagnum associations represent a moisture gradient from imperfectly to very poorly drained with the latter occurring on the wettest sites. The White spruce/Horsetail association also occurs on moist sites, however the nutrient status is improved on these sites due to seepage water inputs.

The Lodgepole pine/Labrador tea/Lichen association represents the drier extreme of the moisture gradients and is only found on coarser textured, well-drained materials.

Succession on modal sites in the Boreal Foothills is to a white spruce climax. The rate of succession varies, largely depending on vegetative competition after fire or logging, and the seed source of white spruce. The Lodgepole pine-Black spruce/Labrador tea/Feathermoss association would be expected to succeed to Black spruce as would the Lodgepole pine/Labrador tea/Lichen association. The rate of succession would be much slower in the latter case due to the dry nature of these sites. The Black spruce/Feathermoss, Tamarack-Black spruce/Dwarf birch/ Sphagnum, White spruce/Horsetail and Pine/Labrador tea/Lichen association may be considered edaphic climaxes. Although these associations may change over long periods of time there is insufficient information to infer the rate, direction, and nature of such changes.

2.3 Boreal Uplands

The Boreal Uplands Ecoregion (Ecoregion 9, Strong and Leggat, 1982) occupies a band trending northwest to southeast across the south central portion of the study area (Fig. 2, Vol. 1). It occurs above the Boreal Foothills at elevations ranging from approximately 1 060 m to 1 280 m asl.

The ecoregion resembles the Subalpine as coniferous forests are prevalent in both. However, the characteristic understory species are different. In addition, the potential climax species is considered to be white spruce or black spruce in the Boreal Uplands while Engelmann spruce or Engelmann spruce-white spurce hybrids are considered to be climax species in the Subalpine.

The climate of the Boreal Uplands shows a Cordilleran influence which produces warm winter temperatures and cooler summer temperatures than other Boreal Ecoregions experience. The boreal influence, Continental precipitation regime, contributes maximum precipitation in the May to September period. Specific climatic parameters for climatic stations within the study area are shown in Appendix E.

The topography consists of undulating and rolling plateau remnants at higher elevations than the Boreal Foothills Ecoregion. Morainal and residual materials are dominant.

Lodgepole pine dominates the overstory on modal sites within the Boreal Uplands with white and black spruce as potential climax species. In general, black spruce appears to be more prevalent in the pine stands occurring in slightly wetter locations. Understory vegetation on modal sites is not as diverse as in the Boreal Foothills. Ericaceous shrubs are common and the herb layer is generally sparse. Brunisolic Gray Luvisols predominate, but Eluviated Eutric Brunisols are also common.

Imperfectly to poorly drained depressional areas are black spruce dominated with dwarf birch shrublands being common in the wettest of these sites. Organic and gleysolic soils are prevalent in these locations.

Aspen is restricted to steep south-facing slopes in the Boreal Uplands where temperatures are warmer due to increased solar radiation. Understory species in these stands reflect dry site conditions.

There are 11 associations identified in this study for the Boreal Uplands ecoregion. Of these, three represent modal conditions, three reflect the presence of seepage inputs, three indicate higher water tables and two represent dry site conditions.

The upper elevation limit of the Boreal Uplands lies at about 1 280 m where the Lodgepole pine/White-flowered rhododendron/Feathermoss association generally replaces the Lodgepole pine/Labrador tea-Tall bilberry association on modal sites. The lower elevation boundary occurs at approximately 1 060 m where the Lodgepole pine/Low-bush cranberry/Wild sarsaparilla association of the Boreal Foothills replaces the Lodgepole pine/Labrador tea/Feathermoss association on modal sites.

2.3.1 Lodgepole Pine/Labrador Tea/Feathermoss (**Pinus contorta/Ledum groenlandicum/Pleurozium schreberi**)

Site Characteristics

Moisture regime	:	Submesic to subhygric
Nutrient regime	:	MesOtrophic to submesotrophic
Slope	:	0-25
Aspect	:	Variable
Elevation	:	1 100 - 1 440
Number of plots	:	9

Soil Characteristics

Parent material	:	M, F, GL, C
Texture (B horizon)	:	Moderately fine to coarse
Drainage	:	Well to imperfect
pH (B horizon)	:	5.2 (4.4-6)
Soils	:	BR.GL, O.LG, O.GL

This association is generally found on gently sloping or nearly level topography with generally mesic conditions, however, it is occasionally found on steep slopes with imperfectly drained soils. Parent materials are variable with moraine, fluvial, lacustrine, colluvium and residual all occurring. The association is generally widespread throughout the ecoregion and is found on sites with similar conditions as those of the Lodgepole pine/Labrador tea-Tail bilberry association.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Ledum groenlandicum**	Labrador tea
	Vaccinium myrtilloides	Blueberry
	Rosa acicularis	Prickly rose

Layer	Species	
Forb	**Cornus canadensis**	Bunchberry
	Linnaea borealis	Twinflower
	Vaccinium vitis-idaea	Bog cranberry
	Epilobium angustifolium	Fireweed
	Vaccinium caespitosum	Dwarf bilberry
	Lycopodium annotinum	Stiff club moss
	Petasites palmatus	Coltsfoot
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Hylocomium splendens	Stair-step moss

Lodgepole pine dominates the tree layer in this association with only minor occurrence of other species. Black and white spruce occurs sporadically as regeneration indicating possible succession to these species. The shrub layer is well-developed and dominated by Labrador tea and blueberry with minor occurrences of prickly rose. The forb layer is moderately well-developed with bunchberry and twinflower being most common. The moss layer is generally well-developed with Schreber's moss, knight's plume moss and stair-step moss all being common.

2.3.2 Lodgepole pine/Labrador Tea-Tall Bilberry
(Pinus contorta/Ledum groenlandicum-Vaccinium membranaceum)

Site Characteristics

Moisture regime : Submesic to subhygric
Nutrient regime : Mesotrophic to submesotrophic
Slope : 0-25%
Aspect : Variable (N, NE, NW)
Elevation : 1 080- 1 220
Number of plots : 5

Soil Characteristics

Parent material : Moraine
Texture (B horizon): Moderately fine
Drainage : Well to imperfect
pH (B horizon) : 4.8 (4.4-5)
Soils : E.DYB, O.LG, GL.GL

This association is relatively widespread in the Boreal Uplands generally under mesic conditions, however, it is expected that this association would be more common at the upper elevations of the ecoregion. Parent materials are moraine veneers and blankets over bedrock or residual materials. Most occurrences were on gently sloping topography, however, the association is also expected on steeper northerly slopes.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Vaccinium membranaceum**	Tall bilberry
	Ledum groenlandicum	Labrador tea
	Vaccinium myrtolloides	Blueberry
Forb	**Cornus canadensis**	Bunchberry
	Linnaea borealis	Twinflower
	Rubus pedatus	Five-leaved bramble
	Lycopodium annotinum	Stiff club-moss
	Orthilia secunda	One-sided wintergreen
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss

The tree layer is well developed and dominated by lodgepole pine. Black spruce and alpine fir occur sporadically as regeneration indicating possible succession to those species. The well-developed shrub layer is composed mainly of ericaceous shrubs. The presence of blueberry in combination with tall bilberry indicates that this association is a transition from the Lodgepole pine/Tall bilberry/Five-leaved bramble association common in the Subalpine to the Lodgepole pine/Labrador tea/Schreber's moss association found more commonly in the Boreal Uplands. The forb layer is generally poorly developed with moderate species diversity, however, the moss cover is generally heavy as would be expected in this ecoregion.

2.3.3 Lodgepole Pine/Alder/Dewberry
(**Pinus contorta/Alnus crispa/Rubus pubescens**)

Site Characteristics

Moisture regime : Subhygric to SUBmesic
Nutrient regime : Permesotrophic
Slope : 22-65%
Aspect : Variable
Elevation : 1 080-1 270
Number of plots : 6

Soil Characteristics

Parent material : C, M
Texture (B horizon): Moderately fine
Drainage : Well to imperfect
pH (B horizon) : 6.2 (6-6.5)
Soils : GL.GL, O.EB, BR.GL

This association is relatively common on strong to extreme slopes in the Boreal Uplands. Many of these sites receive seepage water from upslope therefore improving the availabiity of nutrients. The higher than normal pH for these sites is also indicative of an improved nutrient regime. Soils are generally shallow over bedrock or residual materials which would influence the amount of near surface seepage present.

Internal drainage varies from well to imperfect depending on site conditions.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Alnus crispa**	Green alder
	Rosa acicularis	Prickly rose
	Spiraea betulifolia	White meadowsweet
	Viburnum edule	Low-bush cranberry
Forb	**Epilobium angustifolium**	Fireweed
	Linnaea borealis	Twinflower
	Pyrola asarifolia	Pink wintergreen
	Rubus pubescens	Dewberry
	Arnica cordifolia	Heart-leaved arnica
	Aster conspicuus	Showly aster
	Cornus canadensis	Bunchberry
	Maianthemum canadense	Two-leaved Solomon's seal
	Mertensia paniculata	Tall mertensia
Grass	**Elymus innovatus**	Hairy wild rye
Moss	**Pleurozium shereberi**	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Hylocomium splendens	Stair-step moss

Lodgepole pine dominates the tree layer in this association with sporadic occurrence of white spruce, balsam poplar and trembling aspen. White spruce occurs spradically as regeneration and would be expected to form the overstory under climax conditions. The shrub layer is well-developed in comparison to other associations in the ecoregion. Green alder dominates this layer; its growth is probably enhanced by seepage inputs to the soils. Rose, meadowsweet and low-bush cranberry are also common. The forb layer is relatively species-rich as would be expected over such a range of site moisture conditions and high nutrient status.

Moss cover is moderate to low, probably due to the heavier cover in the shrub and forb layers.

2.3.4 Lodgepole Pine/Alder/Labrador Tea
(**Pinus contorta/Alnus crispa/Ledum groenlandicum**)

Site Characteristics

Moisture regime : Mesic to hygric
Nutrient regime : Submesotrophic
Slope : 0-4
Aspect : Northerly to neutral
Elevation : 1 095-1 110
Number of plots : 4

Soil Characteristics

Parent materials : M, GF
Texture (B horizon): Moderately fine to coarse
Drainage : Well to imperfect
pH (B horizon) : 5.3 (5-6)
Soils : GL.GL, E.DYB, O.G, O.LG

This association occurs throughout the ecoregion on very gentle slopes, often with imperfect or moderately well drained conditions. The presence of bedrock or residual material near the surface restricts drainage and provides conditions that are suitable for the establishment of alder. These sites have slightly more acid pH's than the lodgepole pine/alder/dewberry association. This is likely due to a decreased input of nutrient-rich seepage waters.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Alnus crispa** **Ledum groenlandicum** **Vaccinium membranaceum**	Green alder Labrador tea Tall bilberry

Forb	**Cornus canadensis**	Bunchberry
	Epilobium angustifolium	Fireweed
	Rubus pedatus	Five-leaved bramble
	Linnaea borealis	Twinflower
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilim crista-castrensis	Knight's plume moss
	Polytrichum junipernum	

Lodgepole pine dominates the tree layer in this association with sporadic occurrence of white and black spruce. Occasionally, white and black spruce occur as regeneration indiating possible succession to these species. The shrub layer is well-developed with green alder dominating. The presence of labrador tea and tall bilberry are indicative of acidic soils. The forb layer is generally poorly developed; bunchberry, fireweed, five-leaved bramble and twinflower occur with low cover. The moss layer is well-developed in the lower understory with Schreber's moss and knight's plume moss being prevalent.

2.3.5 Lodgepole Pine/Twisted Stalk/Feathermoss (**Pinus contorta/Streptopus amplexifolius/Pleurozium schreberi**)

Site Characteristics

Moisture regime : Mesic to submesic
Nutrient regime : Mesotrophic to submesotrophic
Slope : 0-40%
Aspect : Variable
Elevation : 1 210-1 370
Number of plots : 5

Soil Characteristics

Parent material : C, M
Texture (B horizon): Moderately fine to medium
Drainage : Moderately well to well
pH (B horizon) : 4.9 (4.2-6)
Soils : O.GL, BR.GL, E.DYB

This association occurs on level to very strong slopes with predominantly northerly aspects. Mesic moisture conditions and mesotrophic nutrient regimes are common. These sites do not appear to be receiving large amounts of seepage water. The dominant soils are moderately well drained Orthic Gray Luvisols with Regosols and Brunisolic Gray Luvisols also present. Colluvial and morainal materials over bedrock and saprolite are typically associated with these sites.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Viburnum edule**	Low-bush cranberry
	Rosa acicularis	Prickly rose
	Rubus pedatus	Five-leaved bramble
Forb	**Linnaea borealis**	Twinflower
	Cornus canadensis	Bunchberry
	Streptopus amplexifolius	Twisted-stalk
	Orthilia secunda	One-sided wintergreen
	Epilobium angustifolium	Fireweed
	Rubus pubescens	Dewberry
	Lycopodium annotinum	Stiff club-moss
	Petasites palmatus	Coltsfoot
	Arnica cordifolia	Heart-leaved arnica
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Hylocomium splendens	Stair-step moss
Lichen	**Peltigera apthosa**	Studded-leather lichen

Lodgepole pine dominates the well-developed tree canopy in this association with trembling aspen, white spruce and alpine fir occurring sporadically. Regeneration by spruce and alpine fir suggests eventual succession to these species. The shrub layer is generally low in cover with low-bush cranberry and prickly rose as constant species. The forb layer is heavier and more diverse than other associations in the ecoregion probably because of microsite variability in moisture and nutrient regimes. The moss layer is moderate with Schreber's moss, knight's plume moss and stair-step moss being dominant.

2.3.6 White Spruce/Feathermoss (**Picea glauca/Hylocomium splendens**)

Site Characteristics

Moisture regime : Hygric to mesic
Nutrient regime : Mesotrophic to eutrophic
Slope : 0-47%
Aspect : Variable
Elevation : 1 105-1 480
Number of plots : 12

Soil Characteristics

Parent material : M, C, F
Texture (B horizon): Moderately fine textured, moderately coarse textured
Drainage : Well to imperfect
pH (B horizon) : 6.4 (4.2-8)
Soils : O.GL, H.LG, E.DYB, O.R, O.EB

This association occurs sporadically in the Boreal Uplands and represents a near climax successional status. As such, it covers a relatively broad range of site and soil conditions. Slopes are gentle to extreme with the extreme slopes having only one sample. Moisture conditions vary from mesic to hygric and drainage from well to imperfect.

Characteristic Species

Layer	Species	
Tree	**Picea glauca** **Abies lasiocarpa**	White spruce Alpine fir

Layer	Species	
Shrub	**Picea glauca**	White spruce
	Abies lasiocarpa	Alpine fir
	Lonicera involucrata	Bracted honeysuckle
	Rosa acicularis	Prickly rose
	Viburnum edule	Low-bush cranberry
Forb	**Linnaea borealis**	Twinflower
	Cornus canadensis	Bunchberry
	Petasites palmatus	Coltsfoot
Moss	**Hylocomium splendens**	Stair-step moss
	Pleurozium schreberi	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss

White spruce and white spruce-Engelmann spruce hybrids dominate the tree canopy in this association with frequent occurrences of lodgepole pine and Alpine fir. Regeneration is mainly Alpine fir indicating that is may become a more important component of the overstory over time. The shrub layer is poorly developed with a variable species composition and low cover. The forb layer is moderately well-developed with few species being dominant. Stair-step moss, Schreber's moss and knight's plume moss share dominance in the generally well-developed moss layer.

In general this association occurs under the cool, moist conditions common to near climax stands in the region.

2.3.7 Black Spruce-Lodgepole Pine/Labrador Tea-Tall Bilberry (**Picea mariana-Pinus contorta/Ledum groenlandicum-Vaccinium membranacum**)

Site Characteristics

Moisture regime : Mesic to subhygric
Nutrient regime : Mesotrophic to submesotrophic
Slope : 1-12%
Aspect : Variable
Elevation : 1 140-1 250
Number of plots : 5

Soil Characteristics

Parent material :
Texture (B horizon): Moderately fine to coarse textured
Drainage : Well to imperfect
pH (B horizon) : 5.3 (4-6.5)
Soils : O.LG

This association occurs on gently sloping, well to imperfectly drained sites within the Boreal Uplands Ecoregion. Materials are generally morainal deposits. Moisture conditions are mesic to subhygric and nutrient conditions are in the mesotrohic to submesotrophic range.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
	Pinus contorta	Lodgepole pine
Shrub	**Ledum groenlandicum**	Labrador tea
	Vaccinium membranaceum	Tall bilberry
	Picea mariana	Black spruce
	Rosa acicularis	Prickly rose
Forb	**Cornus canadensis**	Bunchberry
	Vaccinium vitis-idaea	Bog cranberry
	Linnaea borealis	Twinflower
	Vaccinium caespitosum	Dwarf bilberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss
	Dicranum scoparium	
Lichen	**Peltigera aphthosa**	Studded-leather lichen
	Peltigera malacea	

Black spruce dominates the tree canopy in this association with lodgepole pine occurring with lower cover. Black spruce is a common regeneration species indicating the successional trend. The shrub layer is poorly developed with labrador tea dominating. The forb layer is generally sparse with bunchberry, bog cranberry, twinflower and dwarf bilberry as the only constant species. The well-developed moss layer is dominated by step moss.

This association represents a more advanced successional stage than the Lodgepole pine/Labrador tea-Tall bilberry and could be considered to be part of the same association. It is expected that succession to the black spruce-dominated phase would occur more readily on wetter sites with poorer drainage.

2.3.8 Black Spruce/Horsetail/Sphagnum
(**Picea mariana/Equisetum spp./Sphagnum spp.**)

Site Characteristics

Moisture regime : Subhydric to subhygric
Nutrient regime : Submesotrophic
Slope : 0-9%
Aspect : Variable
Elevation : 1 090-1 400
Number of plots : 6

Soil Characteristics

Parent material : M, O
Texture (B horizon): Not collected
Drainage : Moderately well to poor
pH (B horizon) : Not collected
Soils : Gleysols

This association occurs sporadically in the Boreal Uplands on level to gently sloping topography in lower slope or depressional positions. Drainage varies from moderately well to poor with poorly drained sites predominating. Sites are all hygric to subhydric, and small areas of open water are common. Nutrient regimes are expected to be submesotrophic. Gleysolic and organic soils are typical of this association.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
Shrub	**Picea mariana**	Black spruce
	Betula glandulosa	Dwarf birch
	Ledum groenlandicum	Labrador tea
Forb	**Vaccinium vitis-idaea**	Bog cranberry
	Equisetum scirpoides	Sedge-like horsetail
	Petasites palmatus	Coltsfoot
	Mitella nuda	Bishop's cap
	Equisetum arvense	Horsetail
Grass	**Carex vaginata**	Sheathed sedge
Moss	**Hylocomium splendens**	Stair-step moss
	Aulacomnium palustre	
	Tomenthypnum nitens	
	Ptilium crista-castrensis	Knight's plume moss
	Pleurozium schreberi	Schreber's moss

Open stands of mature black spruce having a shrub understory of dwarf birch and labrador tea, a sparse herb cover dominated by horsetails, and a moss layer dominated by several sphagnum species and stair-step moss characterize this association. The average age of the black spruce overstory (157 years) is significantly higher than that of pine-dominated associations in the Boreal Uplands Ecoregion as the former is infrequently burned. This association represents an edaphic climax on wet organic depressional sites with poor nutrient status.

2.3.9 Dwarf Birch/Sedge/Sphagnum (**Betula glandula/Carex spp./Sphagnum spp.**)

Site Characteristics

Moisture regime	Hygric to subhygric
Nutrient regime	Mesotrophic to permesotrophic
Slope	0-2%
Aspect	
Elevation	1 210-1 290
Number of plots	3

Soil Characteristics

Parent material	O, F
Texture (B horizon)	Not collected
Drainage	Imperfect to poor
pH (B horizon)	Not collected
Soils	Not collected

This association occurs to a limited extent in the Boreal Uplands in poorly drained depressional areas. Moisture regime is usually hygric although somewhat drier conditions may be found depending on the depth of organic deposits.

Characteristic Species

Layer	Species	
Shrub	**Betula glandulosa**	Dwarf birch
Grass	**Carex** spp.	Sedges
Moss	**Aulacomium palustre** **Tomenthypnum nitens** **Sphagnum** spp.	 Sphagnum

The shrub layer is generally well-developed in this association with dwarf birch being dominant. Tamarack occurs frequently and willow species are common. The forb layer has generally low cover with three-leaved Solomon's-seal, water avens and bog cranberry common.

Sedge species dominate the grass layer, however, species composition is variable. The moss layer is dominated by various **Sphagnum** species and **Aulacomium palustre** is constant.

This association is not very extensive in the Boreal Uplands as the topography is generally not suitable for its development.

2.3.10 Dry Meadow-Fluvial

Site Characteristics

Moisture regime : Subhygric to subhydric
Nutrient regime : Permesotrophic
Slope : 0-2%
Aspect :
Elevation : 1 180-1 235
Number of plots : 4

Soil Characteristics

Parent material : F, M
Texture (B horizon): Not collected
Drainage : Moderately well to poor
pH (B horizon) : Not collected
Soils : Regosols

This association occurs to a limited extent in the ecoregion in valley bottom locations. Moisture conditions are highly variable depending on specific site locations. The association is usually found on regosolic soils.

Characteristic Species

Layer	Species	
Forbs	**Thalictrum venulosum**	Meadow rue
	Mertensia paniculata	Tall mertensia
	Delphinium glauca	Tall larkspur
	Achillea millifolium	Yarrow

	Fragaria virginiana	Wild strawberry
	Galium boreale	Northern bedstraw
Grass	**Carex aquatilis**	Water sedge

The shrub, forb and grass layers are all relatively well-developed in this association. Species composition and cover varies with the moisture status of each particular site. Moister sites are usually dominated by willow and dwarf birch whereas drier sites support a relatively diverse cover of forb, grass and graminoid species.

2.3.11 Trembling Aspen/Buffalo-berry/Showy Aster (**Populus tremuloides/Shepherdia canadensis/Aster conspicuus**)

Site Characteristics

Moisture regime : Submesic to subxeric
Nutrient regime : Mesotrophic
Slope : 11-48%
Aspect : Southerly
Elevation : 1 075-1 240
Number of plots : 2

Soil Characteristics

Parent material : C, GL
Texture (B horizon): Medium
Drainage : Well
pH (B horizon) : 7.0
Soils : O.R

This association is found to a limited extent in the Boreal Uplands on moderate to extreme south-facing slopes. Moisture conditions are subxeric as a result of the combination of sloping topography and increased radiation received because of southerly aspects.

Characteristic Species

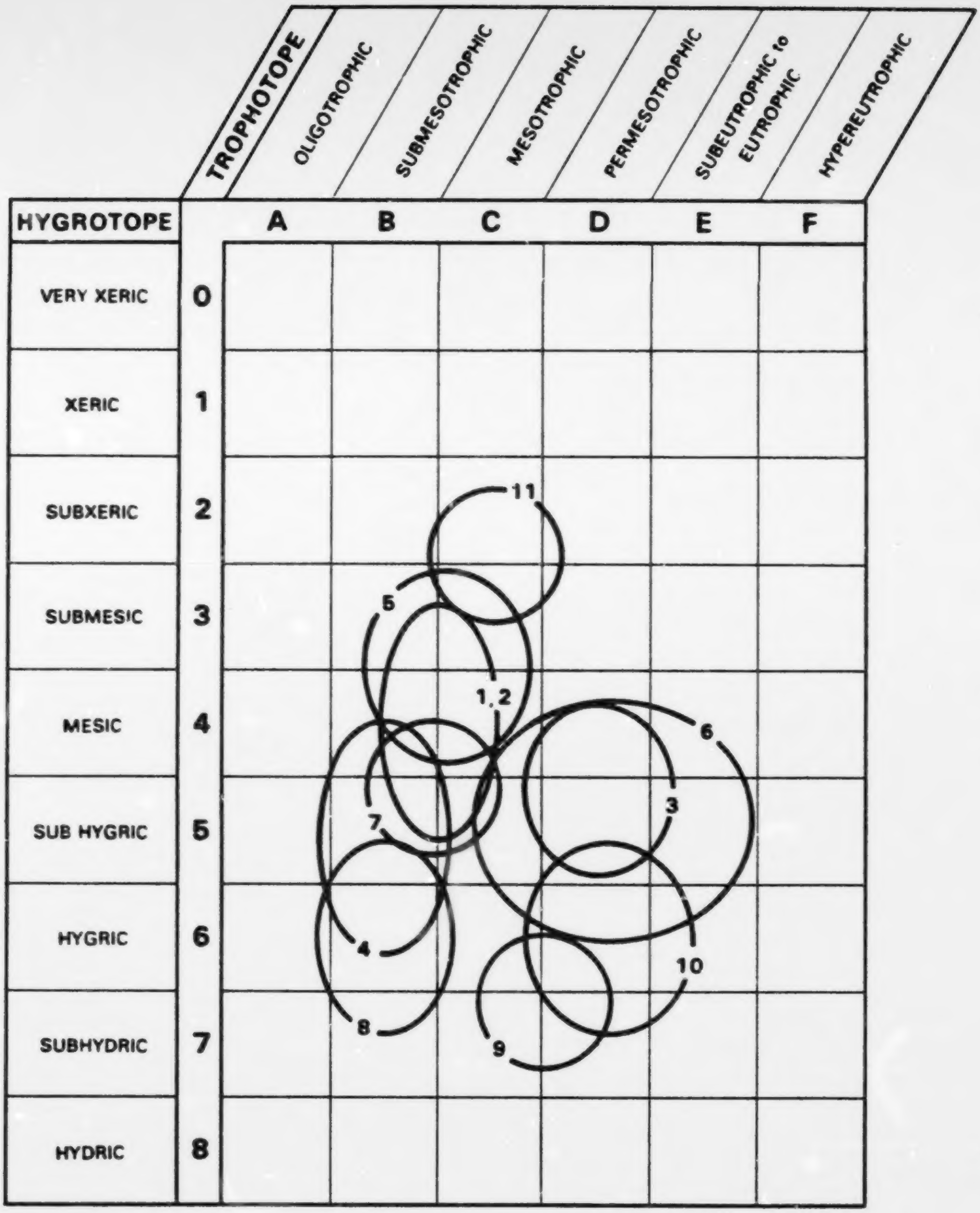
Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
Shrub	**Shepherdia canadensis**	Buffalo-berry
	Rosa acicularis	Prickly rose
Forb	**Aster conspicuus**	Showy aster
	Vaccinium vitis-idaea	Bog cranberry
	Lathyrus ochroleucus	Pea vine
	Castilleja miniata	Indian paint brush
	Fragaria virginiana	Strawberry
Grass	**Elymus innovatus**	Hairy wild rye

The tree layer, which is dominated by trembling aspen, is often relatively open in this association. Lodgepole pine may form part of the overstory. The shrub layer is dominated by buffalo-berry and prickly rose, indicating the dry site conditions. The forb layer is generally relatively lush with showy aster being prominent. The grass layer is generally heavier than other associations in this ecoregion with hairy wild rye dominating. Moss cover is low, however, lichens may be present on the drier sites within this association.

This association may succeed to white spruce over time but this succession would be very slow due to the xeric conditions found on the southerly slopes.

2.3.12 Discussion

The distribution of plant associations within the Boreal Uplands Ecoregion is largely controlled by variation in local drainage conditions and, to some extent, by elevation. An edatopic grid showing moisture and nutrient regimes for the Boreal Uplands is presented in Figure 152.


TROPHOTOPE
OLIGOTROPHIC
SUBMESOTROPHIC
MESOTROPHIC
PERMESOTROPHIC
SUBEUTROPHIC to EUTROPHIC
HYPEREUTROPHIC
HYGROTOPE
A
B
C
D
E
F
VERY XERIC 0
XERIC 1
SUBXERIC 2
SUBMESIC 3
MESIC 4
SUB HYGRIC 5
HYGRIC 6
SUBHYDRIC 7
HYDRIC 8
11
5
1,2
6
3
7
4
10
8
9

1. Lodgepole pine / Labrador tea / Feathermoss
2. Lodgepole pine / Labrador tea - Tall bilberry
3. Lodgepole pine / Alder / Dewberry
4. Lodgepole pine / Alder / Labrador tea
5. Lodgepole pine / Twisted stalk / Feathermoss
6. White spruce / Feathermoss
7. Black spruce - Lodgepole pine / Labrador tea - Tall bilberry
8. Black spruce / Horsetail / Sphagnum
9. Dwarf birch / Sedge / Sphagnum
10. Dry meadow - fluvial
11. Trembling aspen / Buffalo-berry / Showy aster

Figure 152: Moisture and Nutrient Regimes for Plant Associations in the Boreal Uplands Ecoregion

The two modal associations; Lodgepole pine/Labrador tea/Feathermoss and Lodgepole pine/Labrador tea/Tall bilberry represent an elevational gradient. The latter, which is dominant at the upper elevations of the ecoregion, is transitional to the Lodgepole pine/Tall bilberry/Five-leaved bramble association of the Subalpine. The Lodgepole pine/Labrador tea/Feathermoss association is more prevalent at mid to lower elevations. Both of these associations are regenerating to either white or black spruce with black spruce being more common on the slightly moister conditions. The Black spruce- Lodgepole pine/Labrador tea/Tall bilberry association occupies very similar sites to the two previously discussed, except that site conditions are somewhat more moist. This association grades into the Black spruce/Horsetail/Sphagnum association where soils become gleysolic.

The Lodgepole pine/Alder/Labrador tea, Lodgepole pine/Alder/Dewberry and Lodgepole pine/Twisted stalk/Feathermoss associations all develop in response to variable amounts of seepage on gentle to extreme slopes. This seepage has an effect on both moisture and nutrient regimes resulting in a generally more diverse species composition. Variable amounts of soil and water movement causes large microsite variation and contributes to a complex vegetation pattern in areas where these associations occur.

The Dwarf birch/Sedge/Sphagnum and the Dry Meadow associations often occur as a complex in valley bottom locations where a combination of high water tables and cold air drainage precludes tree growth. The Dry Meadow is more common in the larger valleys near fluvial systems.

The Aspen/Buffalo-berry/Showy aster association has a limited distribution in the Boreal Uplands as it is restricted to steep south-facing slopes with dry site conditions. This association is replaced by the Lodgepole pine/Hairy wild rye association in the Subalpine and upper elevations of the Boreal Uplands.

2.4 Subalpine

The Subalpine Ecoregion (Ecoregion 6, Strong and Leggat, 1982) occurs in the southerly portion of the study area (Figure 2, Vol. I). Its altitude is situated above the Boreal Uplands and below the Alpine Ecoregion. Elevations range from approximately 1 280 to 2 000 asl.

Closed coniferous forest dominates the Subalpine landscape with open stands occurring only at higher elevations where "krummholtz" forest develops. Meadow and shrubland vegetation is prevalent only in cool, moist depressional areas.

The ecoregion has a Cordilleran climate characterized by cold snowy winters and showery cool summers. Specific climatic parameters based on climatic records within the study area are shown in Appendix E.

The topography varies from rolling plateau remnants to foothill ridges and sub-parallel mountain ranges. Materials are morainal, residual and colluvial.

Lodgepole pine dominates on modal sites at lower elevations. Engelmann x white spruce, Engelmann spruce and alpine fir are a common components of these stands and would be expected to be the successional species. The dominance of pine can be attributed largely to the extensive fire history of the area. Engelmann spruce and alpine fir become predominant at the mid and upper elevations of the Subalpine. This is probably due to the cooler, moister conditions encountered at higher elevations, which favor spruce and fir growth, as well as a lower frequency of large fires where site conditions tend to be more moist. Understory vegetation reflects the change from a boreal to subalpine climate with white-flowered rhododendron becoming dominant in the shrub layer in many stands.

Grasslands are scattered through the ecoregion on upper portions of steep south-facing slopes. These are a result of exposure effects which preclude the growth of trees. Meadow and shrubland vegetation types are encountered in valley bottom locations, usually near small drainage courses. In these instances, the combination of abundant moisture and cold air drainage presents establishment of tree species.

There are 10 associations identified for the subalpine in this study. Of these, three represent near modal conditions, three characterize xeric sites and four are found in wetter landscape positions.

The lower elevation boundary of this ecoregion in the study area is considered to be where the Lodgepole pine/White-flowered rhododenron/ Feathermoss association assumes dominance on modal sites. This occurs at approximately 1 280 m. The upper boundary is defined by the absence of tree species in the Alpine Ecoregion.

2.4.1 Lodgepole Pine/White-Flowered Rhododendron/Feathermoss (**Pinus contortaoRhododendron albiflorum/Pleurozium schreberi**)

Site Characteristics

Moisture regime	: Submesic to hygric
Nutrient regime	: Mesotrophic to submesotrophic
Slope	: 0-24%
Aspect	: Northerly (and neutral)
Elevation	: 1 100-1 840
Number of plots	: 27

Soil Characteristics

Parent material	: M, C, X
Texture (B horizon)	: Moderately fine to coarse
Drainage	: 4.5 (3.3-6)
pH (B horizon)	:
Soils	: BR.GL, O.LG, E.EB, E.DYM, O.GL, GLBR.GL

This association is widespread on gently sloping areas with generally northerly aspects in the study area. While elevations range from 1 100-1 820 m, the association becomes prevalent only above approximately 1 300 m. The moraine deposits are of both continental and cordilleran origin and are generally underlain by saprolite or bedrock. Brunisolic and luvisolic soils occur most commonly in conjunction with this association. Textures range from moderately fine to coarse but are mainly moderately fine to medium textured and sites are well to moderately well drained.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Rhododendron albiflorum**	White-flowered rhododendron
	Ledum groenlandicum	Labrador tea
	Vaccinium membranaceum	Tall bilberry
	Abies lasiocarpa	Alpine fir

Layer	Species	
Forb	**Cornus canadensis**	Bunchberry
	Rubus pedatus	Five-leaved bramble
	Vaccinium vitis-idaea	Bog cranberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Hylocomium splendens	Stair-step moss

The tree layer is dominantly lodgepole pine with minor occurrences of Alpine fir, black spruce, Engelmann spruce and white spruce-Engelmann spruce hybrids. Regeneration by Alpine fir and Engelmann and black spruce indicate eventual succession to these species. The shrub layer is dominated by white-flowered rhododendron, labrador tea and tall bilberry. False azalea (Menziesia ferruginea) replaces white-flowered rhododendron as the dominant shrub in some plots of this association (mainly to the east of the Smoky River). The forb layer is poorly developed with only bunchberry, five-leaved bramble and bog cranberry occurring consistently. Feathermosses such as Schreber's moss, knight's plume moss and stair-step moss dominate the well-developed moss layer.

2.4.2 Engelmann Spruce-Alpine Fir/White-Flowered Rhododenron/Feathermoss **(Picea engelmanni-Abies lasiocarpa/Rhododendron albiflorum/ Pleurozium)**

Site Characteristics

Moisture regime : Submesic to hygric
Nutriment regime : Submesotrophic eutrophic
Slope : 2-38%
Aspect : Variable
Elevation : 1 325-1 820
Number of plots : 9

Soil Characteristics

Parent material : M, X
Texture (B horizon): Medium to moderately coarse

Drainage : Well to poor
pH (B horizon) : 6.3 (4.5-8.0)
Soils : O.G, O.LG

This association has a limited distribution over a wide range of site and soil conditions in the Ecoregion. Elevations range from 1 325-1 820 and slopes and aspects are variable. Materials are generally morainal or saprolite. At sites where soils were sampled, gleysols were found. However, this association would also be expected to occur on brunisolic and luvisolic soils.

Characteristic Species

Layer	Species	
Tree	**Picea engelmanni**	Engelmann spruce
	Abies lasiocarpa	Alpine fir
Shrub	**Rhododendron albiflorum**	White-flowered rhododendron
	Vaccinium membranaceum	Tall bilberry
Forb	**Orthilia secunda**	One-sided wintergreen
	Rubus pedatus	Five-leaved bramble
	Cornus canadensis	Bunchberry
Moss	**Pleurozium schreberi**	Schreber's moss
	Hylocomium splendens	Stair-step moss
	Ptilium crista-castrensis	Knight's plume moss

The tree layer consists of a mixture of Engelmann spruce and Alpine fir with minor occurrence of lodgepole pine. Regneration is mainly Alpine fir with minor occurrences of Engelmann spruce. White-flowered rhododendron and tall bilberry dominate the well-developed shrub layer. The forb layer is generally poorly developed with one-sided wintergreen, five-leaved bramble and bunchberry being the dominant species. Feathermoss cover is generally moderate and lichens are often present with variable cover.

This association represents the climax vegetation type of the Lower Subalpine. It is restricted in occurrence because of the high frequency of fires and the predominance of Lodgepole pine dominated seral stages of succession.

2.4.3 Engelmann Spruce-Alpine Fir/Red Heather (**Picea engelmanni-Abies lasiocarpa/Phyllodoce empetriformus**)

Site Characteristics

Moisture regime	: Mesic to submesic
Nutrient regime	: Submesotrophic
Slope	: 7-28%
Aspect	: Northerly
Elevation	: 1 840-2 040
Number of plots	: 3

Soil Characteristics

Parent material	: Colluvium
Texture (B horizon)	: Not collected
Drainage	: Moderately well to well
pH (B horizon)	: Not collected
Soil	: Not collected

This association occurs to a limited extent at the upper elevations of the subalpine ecoregion on gently to strongly sloping topography. Moisture regimes vary from mesic to submesic due to the coarse materials found at these elevations. Northerly aspects are characteristic; associations found on south slopes at these elevations would reflect much drier conditions.

Characteristic Species

Layer	Species	
Tree	**Picea engelmanni**	Engelmann spruce
	Abies lasiocarpa	Alpine fir

Layer	Species	
Shrub	**Abies lasiocarpa**	Subalpine fir
Forb	**Cassiope tetrogona**	White mountain heather
	Phyllodoce empetriformis	Red heather
Moss	**Dicranum scoparium**	
Lichen	**Cladonia ecmocyna**	

The tree canopy is usually open in this association with Engelmann spruce and alpine fir occurring with low cover. At upper elevations the tree species occur as krummholtz colonies. The shrub layer is very poorly developed with only spruce and fir regeneration occurring frequently. The forb layer is dominated by heathers with sporadic occurrence of plants often found in the alpine such as Sibbaldia (Sibbaldia procumbens) and mountain arnica (Arnica latifolia). Moss and lichen cover is generally low.

2.4.4 Lodgepole Pine/Tall Bilberry/Five-Leaved Bramble (**Pinus contorta/Vaccinium membranaceum/Rubus pedatus**)

Site Characteristics

Moisture regime : Submesic to hygric
Nutrient regime : Submesotrophic-mesotrophic
Slope : 2-36%
Aspect : Variable
Elevation : 1 310-1 550
Number of plots : 15

Soil Characteristics

Parent material : M, C
Texture (B horizon): Not collected
Drainage : Well to poor
pH (B horizon) : 4.5 (1 plot)
Soils : Brunisols, luvisols

This association is common at the lower elevations of the subalpine ecoregion on gentle slopes. Materials are predominantly moraine veneers and blankets overlying bedrock. Brunisolic and luvisolic soils would be expected to be dominant although soil pits were not done at the majority of plots.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Vaccinium membranaceum** **Ledum groenlandicum**	Tall bilberry Labrador tea
Forb	**Cornus canadensis** **Rubus pedatus** **Vaccinium vitis-idaea**	Bunchberry Five-leaved bramble Bog cranberry
Moss	**Pleurozium schreberi** **Ptilium crista-castrensis** **Hylocomium splendens**	Schreber's moss Knight's plume moss Stair-step moss
Lichen	**Peltigera aphthosa**	Studded-leather lichen

The tree layer is well-developed in this association with lodgepole pine dominating. Black spruce, alpine fir and Engelmann spruce occur sporadically in the tree layer and as regeneration indicating probable succession to these species. The shrub layer is well-developed and consists mainly of the ericaceous shrubs, tall bilberry and Labrador tea. These are indicative of the acidic, cool conditions found in the ecoregion. Bunchberry, five-leaved bramble and bog cranberry are the most common components of the poorly developed forb layer. Mosses are abundant and Schreber's moss, Knights plume moss and stair-step moss being dominant. Lichens occur sporadically, however, Peltigera aphthosa is the only species that occurs consistently.

2.4.5 Black Spruce-Lodgepole Pine/Tall Bilberry (**Picea mariana-Pinus contorta/Vaccinium membranaceum**)

Site Characteristics

Moisture regime : Mesic to hygric
Nutrient regime : Submesotrophic to oligotrophic
Slope : 2-5%
Aspect : Variable
Elevation : 1 380-1 420
Number of plots : 4

Soil Characteristics

Parent material : M, X
Texture (B horizon): Not collected
Drainage : Moderately well to imperfect
pH (B horizon) : Not collected
Soils : Not collected

This association occurs sporadically in the subalpine ecoregion on gently sloping or level areas with variable aspects. In general, drainage is somewhat impeded at these sites, varying from moderately well to imperfect. The association is restricted to the lower elevations of the subalpine zone and actually overlaps into the Boreal Uplands Ecoregion.

Characteristic Species

Layer	Species	
Tree	**Picea mariana**	Black spruce
	Pinus contorta	Lodgepole pine
Shrub	**Ledum groenlandicum**	Labrador tea
	Vaccinium membranaceum	Tall bilberry
	Picea mariana	Black spruce
Forb	**Cornus canadensis**	Bunchberry
	Vaccinium vitis-idaea	Bog cranberry
	Linnaea borealis	Twinflower
	Rubus pedatus	Five-leaved bramble

Layer	Species	
Moss	**Pleurozium schreberi**	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Hylocomium splendens	Stair-step moss
Lichens	**Peltigera aphthosa**	Studded-leather lichen

The tree layer is dominated by black spruce with minor occurrences of lodgepole pine and alpine fir. Regeneration to black spruce and alpine fir indicates the community is fairly stable in a successional sense. It would be expected that the proportion of lodgepole pine would decrease with time and that alpine fir would increase. The shrub layer is moderate and dominated by the ericaceous shrubs labrador tea and tall bilberry. The sparse forb layer is dominated by bunchberry, bog cranberry and twinflower with lesser occurrence of five-leaved bramble. The moss layer is generally heavy, with Schreber's moss being dominant.

The occurrence of a very similar association (Black spruce-Pinus contorta/Labrador tea/Tall bilberry) in the Boreal Uplands suggests that the edaphic factor of imperfect soil drainage is a large influence on the distribution of this association.

2.4.6 Engelmann x White Spruce/Feathermoss (**Picea engelmanni x Glauca/Hylocomium splendens**)

Site Characteristics

Moisture regime : Mesic to hygric
Nutrient regime : Mesotrophic to submesotrophic
Slope : 0-13
Aspect : Northerly
Elevation : 1 360-1 580
Number of plots : 4

Soil Characteristics

Parent material : Colluvium, moraine, fluvial
Texture (B horizon): Not collected
Drainage : Moderately well to well
pH (B horizon) : Not collected
Soils : Not collected

This association occurs to a limited extent on generally northerly aspects at lower elevations of the Subalpine Ecoregion within the study area. Drainage varies from moderately to well, however, the association could be expected on slightly moister sites. Parent materials are variable. Aspect seems to be most important in controlling the distribution of this association.

Characteristic Species

Layer	Species	
Tree	**Picea engelmanni x glauca**	Engelmann x white spruce
	Abies lasiocarpa	Alpine fir
Shrub	**Abies lasiocarpa**	Alpine fir
Forb	**Cornus canadensis**	Bunchberry
	Petasites palmatus	Coltsfoot
	Orthilia secunda	One-sided wintergreen
	Equisetum scirpoides	Horsetail
	Mitella nuda	Bishop's cap
Moss	**Hylocimium splendens**	Stair-step moss
	Pleurozium schreberi	Schreber's moss
	Ptilium crista-castrensis	Knight's plume moss
	Dicranum scoparium	
Lichen	**Peltigera aphthosa**	Studded-leather lichen
	Cladonia chlorophaea	

Engelmann x white spruce and alpine fir constitute the overstory of stands belonging to this association. The poorly developed shrub layer consists mainly of alpine fir. Forbs typical of moist shady sites characterize the forb layer which is also poorly developed. Grasses are present but with very low cover. The moss layer generally has high cover and feathermosses are important constant species. At higher elevations, the lichen layer is relatively diverse but coverage is low.

2.4.7 Lodgepole Pine/Hairy Wild Rye (**Pinus contorta/Elymus innovatus**)

Site Characteristics

Moisture regime : Submesic to xeric
Nutrient regime : Submesotrophic
Slope : 15-58%
Aspect : Southerly
Elevation : 1 330-1 680
Number of plots : 7

Soil Characteristics

Parent materials : C, M
Texture (B horizon): Moderatine fine textured (1 plot)
Drainage : Moderately well to rapid
pH (B horizon) : 5.1 (1 plot)
Soils : O.GL (1 plot)

This association occurs to a limited extent on strong to extreme slopes with southerly aspect. Moisture regimes are dominantly subxeric although the association does occur on moister and drier sites. The combination of steep slopes and increased solar insolation due to south aspects interacts to form communities that reflect the dry nature of these sites.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
Shrub	**Rosa acicularis**	Prickly rose

Layer	Species	
Forb	**Linnaea borealis** **Arnica cordifolia** **Cornus canadensis** **Epilobium angustifolium**	Twinflower Heart-leaved arnica Bunchberry Fireweed
Grass	**Elymus innovatus**	Hairy wild rye
Moss	**Pleurozium schreberi**	Schreber's moss

Lodgepole pine dominates the tree layer in this association. Tree regeneration is generally poor and it is expected that succession to spruce would be slow due to the dry nature of these sites. The shrub layer is poorly developed and highly variable in composition. The only dominant species is prickly rose. The forb layer is again highly variable, due to microsite conditions, however, the overall composition reflects the dry site conditions. The grass layer is better developed than most of the other forested associations with hairy wild rye dominating. Schreber's moss is dominant in the relatively poorly developed moss layer. Lichen spp. are often present as a reflection of the dry site conditions.

This association is not as common in the study area as it is further south in the ecoregion; probably because of the cooler moisture conditions that are prevalent in this area. The topography in the area is also such that southerly slopes are not as common as they are further south where the foothill ridges are all trending in a NW-SE direction.

2.4.8 Dwarf Birch/Sedge/Sphagnum (**Betula glandulosa/Carex spp./Sphagnum spp.**)

Site Characteristics

Moisture regime : Subhygric to subhydric
Nutrient regime : Mesotrophic to permesotrophic
Slope : 0-10%
Aspect : Variable
Elevation : 1 335-1 590
Number of plots : 16

Soil Characteristics

Parent material : O, M
Texture (B horizon): Not collected
Drainage : Imperfect to poor
pH (B horizon) : Not collected
Soils : Not collected

This association has limited distribution in the ecoregion as it is restricted to depressional and valley bottom locations. The excess of soil moisture and the microclimatic influence of cold air drainage and pooling are likely the dominant factors affecting the development of the association. Organic soils or organic veneers over other parent materials are commonly found, and drainage is usually poor or imperfect.

Characteristic Species

Layer	Species	
Shrub	**Betula glandulosa** **Salix** spp.	Dwarf birch Willow
Forb	**Rubus arcticus**	Dwarf raspberry
Grass	**Carex aquatilis**	Water sedge
Moss	**Aulacomnium plaustre** **Tomenthypnum nitens** **Sphagnum warnstorfii**	

The shrub layer is generally well-developed in this association, with dwarf birch and a number of willow species occurring with variable cover. Composition of the forb layer depends on site moisture conditions. A variety of sedges may be found in this association, but **Carex aquatilis** is generally dominant. Moss layer composition is variable; however, the species present tend to indicate an "intermediate fen" condition, which is probably due to the influx of seepage water at these sites.

2.4.9 Dry Meadow Fluvial

Site Characteristics

Moisture regime : Subhygric to subhydric
Nutrient regime : Mesotrophic to permesotrophic
Slope : 0-2%
Aspect : Variable
Elevation : 1 350-1 500
Number of plots : 3

Soil Characteristics

Parent material : F, M
Texture (B horizon): Not collected
Drainage : Moderately well to poor
pH (B horizon) : Not collected
Soils : Cumulic fibrisol (1 plot)

This association occurs sporadically in the Subalpine Ecoregion on level to nearly level topography usually in association with creek valleys. The moisture regime at these sites is often subhygric although wetter conditions may prevail. Cold air drainage is thought to be a factor in the development of these communities as they develop in valley bottom locations. The association represents a slightly drier condition than the Dwarf birch/Sedge spp./Sphagnum spp. association previously described.

The species composition of this vegetation type is somewhat variable depending on site specific moisture conditions. Willows are common in the shrub layer, however, their cover is variable. The forb layer is well-developed but few species occur consistently.

The grass layer is also variable with tufted hair grass (**Deschampsia caespitosa**), mountain timothy (Phleum commutatum) and reed grass (Calamagrostis canadensis) occurring frequently. The moss layer is moderately well-developed with **Aulacomnium palustre** and **Tomenthypnum nitens** occurring with variable cover.

2.4.10 Subalpine Grassland

Site Characteristics

Moisture regime : Very xeric to xeric
Nutrient regime : Oligotrophic to submesotrophic
Slope : 9-54%
Aspect : Southwest
Elevation : 1 690-1 820
Number of plots : 2

Soil Characteristics

Parent material : Residual
Texture : Not collected
Drainage : Rapid to well
pH (B horizon) : Not collected
Soils : Not collected

This association occurs to a very limited extent in the study area on gently to extremely sloping, southwest facing ridge tops with thin soils. The formation of these grasslands is due to the exposure effects of wind and high solar insolation. Moisture conditions are xeric.

Characteristic Species

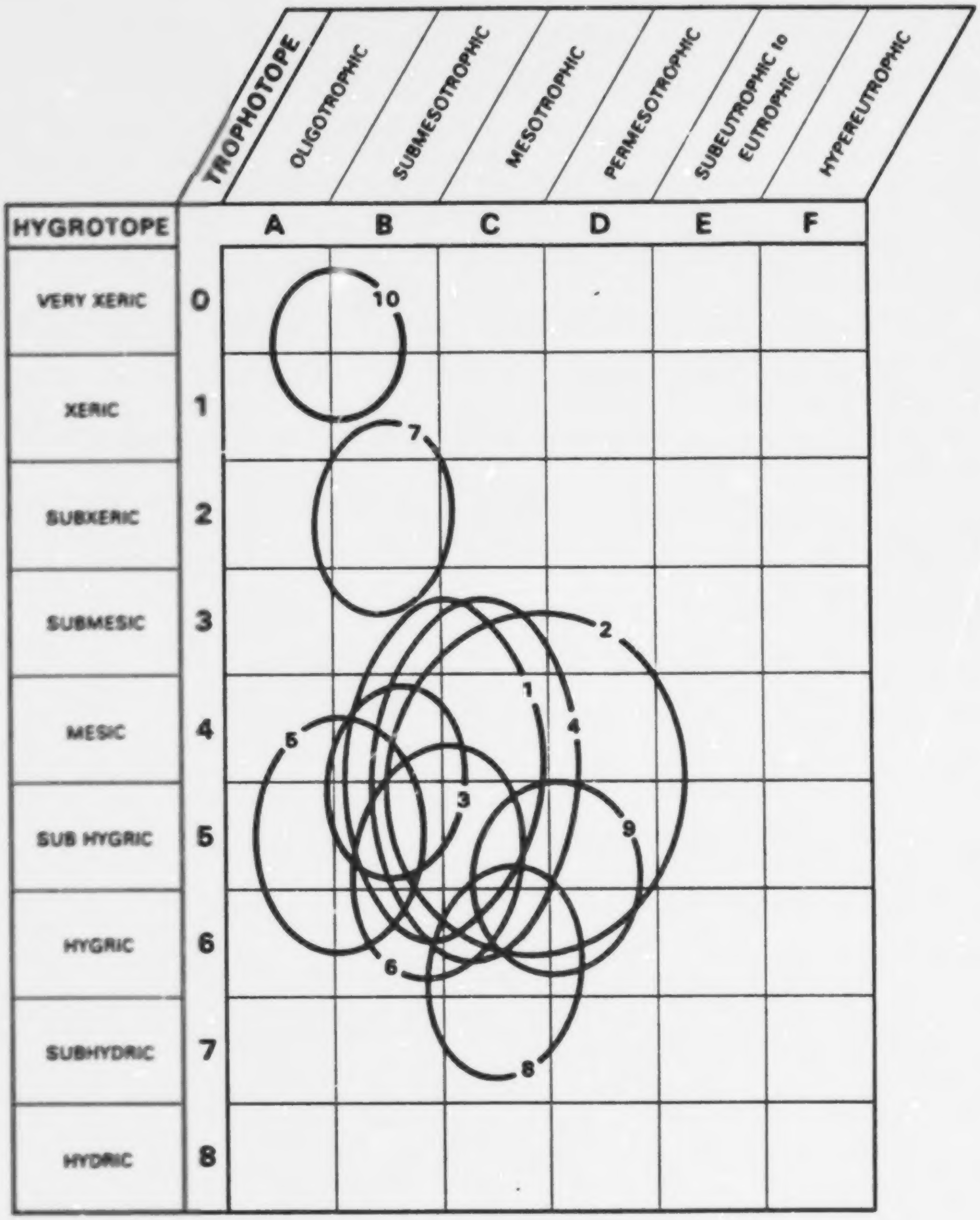
Layer	Species	
Shrub	**Rosa acicularis**	Prickly rose
Forb	**Arctostaphylos uva-ursi**	Bearberry
	Oxytrophis splendens	Showy locoweed
	Saxifraga tricuspidata	
	Hedysarum alpinum	Alpine hedysarum
	Dryas octopetala	White dryad
Grass	**Elymus innovatus**	Hairy wild rye

Vegetation is generally sparse at these sites due to the dry exposed site conditions. The composition reflects these conditions as most species are typically associated with dry sites. Prickly rose, bearberry, showy locoweed and hairy wild rye are the commonly occurring species.

These sites have similar vegetation composition to meadow communities in the alpine ecoregion. However, such species as prickly rose and buffalo-berry would not generally be encountered at the higher elevations.

2.4.11 Discussion

Aspect, exposure, elevation and drainage are important factors governing the distribution of vegetation associations in the subalpine. An edatopic grid showing moisture and nutrient relationships is shown in Figure 153. The aspect and exposure influences are most evident in areas of steeper topography where dry southwesterly slopes support the Pine/Hairy wild rye association which grades into the Subalpine grassland on exposed ridge top locations. Northerly aspects generally have a


TROPHOTOPE
OLIGOTROPHIC
SUBMESOTROPHIC
MESOTROPHIC
PERMESOTROPHIC
SUBEUTROPHIC to EUTROPHIC
HYPEREUTROPHIC
HYGROTOPE
A
B
C
D
E
F
VERY XERIC
0
XERIC
1
SUBXERIC
2
SUBMESIC
3
MESIC
4
SUB HYGRIC
5
HYGRIC
6
SUBHYDRIC
7
HYDRIC
8
10
7
2
1
4
5
3
9
6
8

1. Lodgepole pine / White - flowered rhododendron / Feathermoss
2. Engelmann spruce - Subalpine fir / White - flowered rhododendron / Feathermoss
3. Engelmann spruce - Subalpine fir / Red heather
4. Lodgepole pine / Tall bilberry / Five - leaved bramble
5. Black spruce - Lodgepole pine / Tall bilberry
6. Engelmann white spruce / Feathermoss
7. Lodgepole pine / Hairy wild rye
8. Dwarf birch / Sedge / Sphagnum
9. Dry meadow - Fluvial
10. Subalpine grassland

Figure 153: Moisture and Nutrient Regimes for Plant Associations in the Subalpine Ecoregions

higher component of spruce than pine. The Engelmann spruce-Alpine fir/Red heather, Engelmann x White spruce/White-flowered rhododendron and Engelmann x White spruce/Feathermoss associations are more prevalent on these slightly moister north aspects.

The influence of internal drainage is expressed in the gradient of associations from the modal Lodgepole pine/White-flowered rhododendron and Lodgepole pine/Tall bilberry to the subhygric Black spruce-Pine/Tall bilberry, to the hygric meadow-fluvial vegetation type which represents a unique combination of moisture, materials and microclimate influences in cold air drainage.

2.5 Alpine

The Alpine Ecoregion (Ecoregion 7, Strong and Leggat 1982) occurs in the southwestern corner of the study area (Figure 2, Vol. I) generally above 2 000 m asl.

In the Lower Alpine, willow and dwarf birch communities and "islands" of krumholtz occur. The Middle Alpine is characterized by relatively continuous heather and snowbed communities, while the Upper Alpine is poorly vegetated due to the cool summer temperatures and exposure to wind. Rocky outcrops and stonefield lichen communities are typical of the Alpine Ecoregion.

This ecoregion has a more severe Cordilleran climate than the Subalpine. The overriding climatic elements which characterize the Alpine are strong winds, long winters, and cool summers. Below freezing temperatures are common, even during the warmest months. Precipitation is high during all months, with a tendency for greater precipitation during winter. As there is no overstory vegetation, the surface displays a highly variable microclimate. During summer, the climate of steep south-facing slopes differs markedly from that of the north-facing slopes. During winter, southwest to northwest-facing slopes may be completely snow-free, whereas east aspects or protected pockets may have snow cover several metres deep, possibly lasting well into summer, or even year-round. Specific climatic data for stations within the Subalpine are given in Appendix E.

Vegetation collected in the Alpine was not sorted into plant associations due to the small number of plots sampled. However, a listing of vegetation composition for specific plots is given in Appendix D.

2.6 Montane

The area along the Smoky River up to its confluence with Sheep Creek in the southern portion of the study has a unique vegetation pattern that is not typical of the other ecoregions. The influence of chinook winds along the river valley has allowed the development of grassland communities intermixed with aspen and lodgepole pine stands which have understories reflecting dry site conditions. This area has been described as Montane (Figure 2, Vol, I) as it does resemble Montane conditions found in river valleys further south in the province in the Athabasca, North Saskatchewan and Bow River valleys.

Only two vegetation associations have been sampled in this area.

The grassland communities in the area were not sampled, however, they are relatively common on steep exposed slopes.

2.6.1 Trembling Aspen/Prickly Rose/Hairy Wild Rye (**Populus tremuloides/Rosa acicularis/Elymus innovatus**)

Site Characteristics

Moisture regime : Submesic to mesic
Nutrient regime : Mesotrophic to eutrophic
Slope : 3-54%
Aspect : Variable
Elevation : 1 060-1 310 m asl
Number of plots : 7

Soil Characteristics

Parent material : Fluvial, moraine, colluvium
Texture (B horizon : Moderately fine to medium
pH (B horizon) : 4.5-7.0
Soils : O.EB, BR.GL, O.GL

This association occurs on submesic to mesic sites at Boreal Uplands elevations. It is subject to moderating influences of chinook winds which are prevalent in the area. Slopes are variable at these sites as is aspect indicating that the effects of drying winds are an important factor in the distribution of the association.

Characteristic Species

Layer	Species	
Tree	**Populus tremuloides**	Trembling aspen
Shrub	**Rosa acicularis**	Prickly rose
Forb	**Epilobium angustifolium**	Fireweed
	Fragaria virginiana	Wild strawberry
	Lathyrus ochroleucus	Peavine
	Vicia americana	Wild vetch
	Aster ciliolatus	Lindley's aster
	Aster conspicuus	Showy aster
	Thalictrum venulosum	Veiny meadow rue

Layer	Species	
	Delphinium glaucum	Tall larkspur
	Pyrola asarifolia	Common pink wintergreen
	Galium boreale	Northern bedstraw
Grass	**Elymus innovatus**	Hairy wild rye

This association is characterized by a dense overstory of dominantly trembling aspen. The shrub stratum is not well-developed but contains mainly prickly rose. The forb layer is prominent with several species present, although fireweed is dominant. The grass layer is well-developed and is composed mainly of hairy wild rye. The moss layer is sparse and contains no single dominant. Terrestrial lichens are absent.

2.6.2 Lodgepole Pine-Trembling Aspen/Bearberry (**Pinus contorta-Populus tremuloides/Arctostaphylos uva-ursi**)

Site Characteristics

Moisture regime : Subxeric to xeric
Nutrient regime : Mesotrophic
Slope gradient : 22-54%
Aspect : S, SW
Elevation : 1 530-1 820 m asl
Number of plots : 3

Soil Characteristics

Parent material : C, M
Texture (B horizon): Coarse to medium textured
Drainage : Well
pH (B horizon) : 4.5
Soils : E.DYB

This association occurs on dry exposed south-facing slopes at Subalpine elevations. It is subject to the moderating influences of chinook winds which in combination with southerly slopes creates a warmer microclimate than usual for these elevations.

Characteristic Species

Layer	Species	
Tree	**Pinus contorta**	Lodgepole pine
	Populus tremuloides	Trembling aspen
	Populus balsamifera	Balsam poplar
	Picea engelmanii x glauca	Engelmann x white spruce
Shrub	**Salix spp.**	Willow
Forb	**Arctostaphylos uva-ursi**	Bearberry
	Achillea millefolium	Common yarrow
	Artemesia norvegica	Wormwood
	Cornus canadensis	Bunchberry
	Solidago multiradiata	Goldenrod
	Epilobium angustifolium	Fireweed
	Antennaria rosea	Pink pussy-toes
	Castellija miniata	Common red paint-brush
	Erigiron peregrinus	Fleabane
	Campanula rotundifolia	Harebell
	Castilleja occidentalis	Indian paintbrush
	Antennaria racemosa	Pussy-toes
	Fragaria virginiana	Wild strawberry
	Gentianella amarella	Felwort
Grass	**Elymus innovatus**	Hairy wild rye
	Trisetum spicatum	Spike trisetum
Lichen	**Peltigera malacea**	

This association, due to the dry nature of the sites and high elevations, has very stunted trees. The tree canopy is very open and trembling aspen and lodgepole pine are found mostly in the shrub layer. The forb layer is well-developed and dominated by bearberry. The grass stratum is sparse and there is no dominant species. The moss and lichen are also very poorly developed.

APPENDIX B

EXPLANATION OF DATA ANALYSIS

APPENDIX B

FORAGE INVENTORY DATA ANALYSIS METHODS

KLINKA-PHELPS VEGETATION PROGRAM

This is a FORTRAN program written by Susan Phelps to produce vegetation and summary tables from a file of releve data. It was developed for the Research Branch, B.C. Ministry of Forests and revised for the Alberta Forest Service. The explanation of the tables generated by this program has been split into two parts, the vegetation tables and the summary tables.

Vegetation Tables

The vegetation tables summarize and average the plots within each plant association. This part of the program essentially collects and prints the percent cover and vigor for each species in each layer of every plot. An average value for percent cover (Mean Cover) and a percent frequency of occurrence (Presence) is given for each species, layer by layer, within each plant association. A sample printout of the vegetation form follows.

Ecoregion: Derived from Ecoregions of Alberta (Strong and Leggat)

Association: Arrived at using a minimum of 80% presence and 10% mean cover.

The ecoregion designation appears in the upper left corner under zone. Codes are as follows:

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 1 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P093		3G P091		3G P133		3G P213		3G P214		3G P108		3G P211		3G P205		3G P08A		3G P198		3G P212		3G P160		3G P150		3G P098		3G P115	
NUMBER OF SPECIES PER PLOT	31.7		28		24		30		35		38		40		36		32		26		26		33		35		31		35		36	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																																
1 POPU TRE	100.0	44.4	50	2	25	2	60	2	50	2	35	2	50	2	35	2	50	2	60	2	50	2	65	2	30	2	50	2	35	2	45	2
2 POPU BAL	44.4	3.9	15	2					10	2	1	2									2	2	1	2	5	2	2	2				
3 PICE GLA	25.9	0.4									2	2			1	2									1	2						
4 PINU CON	11.1	0.6									5	2																				
A2 LAYER																																
POPU TRE	96.3	5.1	1	2	15	2	5	2	2	2	5	2	1	2	2	2	5	2	5	2	10	2	1	2	5	2	3	2	2	2	5	2
PICE GLA	48.1	1.3	1	2									1	2	5	2	2	2							1	2	1	2	5	2		
POPU BAL	37.0	1.5							1	2	1	2											15	2	2	2	3	2				
5 BETU PAP	18.5	0.3	3	2																					1	2			1	2		
PINU CON	7.4	0.1																														
6 SALI SCO	3.7	0.2			5	2																										
7 ABIE LAS	3.7	0.0																														
8 ALNU CRI	3.7	0.0			1	2																										
9 SALI BEB	3.7	0.0																							1	2						
B1 LAYER																																
PICE GLA	40.7	0.7							1	2	1	2					2	2													1	2
POPU TRE	29.6	0.7									1	2							1	2							2	2				
BETU PAP	18.5	0.3																			1	2			1	2						
POPU BAL	18.5	0.3					2	2	1	2	1	2															3	2				
ALNU CRI	14.8	0.9			15	2							1	2					5	2												
SALI BEB	14.8	0.6																			3	2	10	2	3	2						
10 ALNU TEN	3.7	0.4																														
11 BETU OCC	3.7	0.1																											2	2		
12 PRUN VIR	3.7	0.0																											1	2		
B2 LAYER																																
13 ROSA ACI	100.0	12.7	10	2	1	2	10	2	7	2	1	2	3	2	2	2	13	2	37	2	17	2	4	2	20	2	13	2	13	2	8	2
14 VIRU EDU	88.9	8.0	13	2	13	2	3	2			5	2	1	2	6	2	17	2	8	2	5.	2	7	2	2	2			25	2	1	2
15 LONI INV	70.4	3.4			5	2			2	2			2	2	1	2	1	2					6	2	4	2	2	2	6	2		
16 SHEP CAN	66.7	7.5					1	2	12	2	37	2	5	2	3	2	10	2					3	2	15	2	1	2	25	2	10	2
17 SPIR BET	59.3	2.8			4	2	2	2			5	2	3	2	2	2	7	2	5	2					3	2	1	2	13	2	10	2
18 AMEL ALN	40.7	0.9											1	2	1	2	2	2			5	2										
POPU TRE	37.0	0.6					1	2	1	2							1	2													1	2
PICE GLA	33.3	0.3					1	2	1	2	1	2	1	2									1	2								
19 CORN STO	29.6	1.3																	3	2	1	2	5	2	1	2						
20 RUBU IDA	29.6	0.9	10	2	5	2													1	2	1	2					1	2				
21 SYMP ALB	22.2	0.7															2	2			2	2	1	2			1	2				
22 VACC MYR	18.5	0.9											1	2	1	2															5	2
POPU BAL	18.5	0.3							1	2																	3	2				
23 LEDU GRO	11.1	0.3							5	2															2	2						
SALI BEB	11.1	0.2							1	2															1	2					3	2
ALNU CRI	7.4	1.0			25	2							1	2																		
24 SALI SPP	7.4	0.4															9	2											2	2		
PRUN VIR	7.4	0.2																														
25 RIBE OXY	7.4	0.2	5	2																												
BETU OCC	7.4	0.1																											1	2		
26 RIBE LAC	7.4	0.1																														
SALI SCO	7.4	0.1							1	2																						

MW	Mixedwood
BF	Boreal Foothills
BV	Boreal Uplands
SA	Subalpine
A	Alpine
MO	Montane

The association name is based on significant plant species within each layer. The layers are as follows:

A_1 - main tree canopy

A_2 - understory trees over 5.0 m tall

E - epiphytes

B_1 - tall shrubs and tree regeneration - 2.5-5.0 m tall

B_2 - low shrubs and tree regeneration les than 2.5 m tall

C - forb species

G - grass species

D - moss species

L - lichen species

Other calculated parameters and their definitions are listed below

%P: Percent Presence

: ranges from greater than 0 to a maximum of 100 (present in all plot).

= no. of plots that species is present in ÷ total no. of plots for the type x 100.

= percent frequency

MC: Mean Cover

: ranges from greater than 0 to a maximum of 100 (total cover in all plots).

= total cover values for each plot - total no. of plots for the type.

%C: Percent Cover

: ranges from 0 to 100 (not present in plot to total cover)

: measured value

S: Sociability

: not measured

V: Vigour

: 0 = dead
1 = poor
2 = fair
3 = good
4 = excellent

Summary Tables

These tables constitute a comparison between the plant associations determined by the vegetation tables. This part of the program takes the Mean Cover (MC) and Percent Presence (%P) for each type and lists them species by species alphabetically. Mean Cover has been renamed Mean Species Significance and the Percent Presence converted to a Presence Class.

Mean species significance classes are as follows:

Percent Presence	Mean Species Significance
Greater than 0% to 20%	I
Greater than 20% to 40%	II
Greater than 40% to 60%	III
Greater than 60% to 80%	IV
Greater than 80% to 100%	V

SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA
PAGE 1

ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ARIF BAL							I 0.4			I 0.2	
ARIF LAS	I 0.0	I 0.2						IV 1.0	II 0.3	II 0.4	
ACHI MIL	I 0.1		I 0.1								III 0.5
ACON DEL											
ACTA RUB	I 0.0		I 0.2	II 0.3	I 0.2						
AGRO SCA											
AGRO TRA											
ALEC SAR											
ALNU CRI	I 0.9	II 0.5	II 1.7		III 10.0		I 0.1	IV 2.0	I 0.1	I 0.2	
ALNU TEN	I 0.4	I 0.8	III 2.8				I 0.1		I 0.3	II 2.6	
AMBL SER											
AMEL ALN	III 0.9	IV 1.2	II 0.8	V 13.3	II 0.6	III 0.8	I 0.1	II 4.7			
ANAS HEL											
ANDR POL											
ANEM LIT											
ANEM PAR											I 0.2
ANTE MED											
ANTE MIC											
ANTE NEG									I 0.4		
ANTE RAC											
ANTE ROS											
ARAL NUD	III 6.3	V 2.2	IV 6.8	V 17.0	V 13.2		I 0.1	V 14.3		I 3.8	
ARCT RUB											
ARCT UVA	I 0.3	I 3.0				IV 7.0	III 0.4				
ARNI CHA											
ARNI COR	II 0.4		I 0.2		III 1.2		I 0.1	II 0.7	I 0.1		
ARNI LAT											
ARNI RYD											
ARTE NOR											
ASTE CIL	II 0.4		II 0.3							II 0.6	
ASTE CON	IV 3.5	V 2.3	III 1.4	III 1.3	V 3.6		II 0.9	IV 2.3		I 0.6	
ASTE HES											
ASTE LAE											
ASTE PUN											
ASTE SIB											
ASTE SPP	I 0.1			II 0.3							
ASTE SUB			I 0.1								
ASTR AME			I 0.1								
ASTR STR											
ATHY FIL											
AULA PAL	I 0.1								I 0.1		III 1.0
BARB HAT											
BARB LYC							I 0.1		I 0.1		
BAZZ TRI											
BETU GLA									I 0.4		I 0.2
BETU OCC	I 0.1							II 0.7			I 0.2
BETU PAP	I 0.3	I 1.7	II 0.6	III 1.5	I 2.0		I 0.1	IV 1.3	I 0.1	II 2.0	
BETU PUM											I 0.2
BETU SPP											
BOTR VIR											

These tables function as a summary of the plant species for all associations and allow comparisons of the significant species for each association.

ENVIRONMENT/SOILS - VEGETATION TABLES

These tables present site data for each association and give mean values for selected parameters. Explanations of selected factors are given below.

Ecological Moisture Regime

VX	Very xeric
X	Xeric
SX	Subxeric
SM	Submesic
M	Mesic
SHG	Subhygric
HG	Hygric
SHD	Subhydric
HD	Hydric

Nutrient Regime

O	Oligotrophic
SM	Submesotrophic
M	Mesotrophic
PM	Permesotrophic
E	Eutrophic
HE	Hypereutrophic

Other soil parameters are explained in either the PLC legend on maps accompanying this report or are according to CSSC (1978) standards. Biomass data was not collected in this study therefore no values are given.

TITLE : MW 1 POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS TABLE 1

		3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P093	P091	P133	P213	P214	P108	P211	P205	P08A	P198	P212	P160	P150	P098	P115	P007	P011	P015	P201
TOWNSHIP & RANGE		65 4	68 8	6712	6812	6813	67 9	66 9	67 5	68 7	68 1	6913	67 2	6610	67 8	68 7	86 6	67 7	68 6	68 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	WW 6
MAPSHEET		83L 10	83L 14	83L 13	83L 13	83L 13	83L 14	83L 14	83L 15	83L 15	83L 16	83L 13	83L 16	83L 12	83L 14	83L 14	83L 15	83L 15	83L 15	83L 15
PHYSIOGRAPHIC SUBREGION																				
GEOMORPHIC SYSTEM																				
ECOSECTION																				
ELEVATION(MASL)	765.0	775	790	820	760	820	810	820	750	750	730	810	740	820	745	765	680	805	650	695
SLOPE(%)	1.5	2	0	2	0	0	2	0	0	2	5	0	4	7	1	1	0	4	2	2
ASPECT(DEG)		356		40			220			340	190		312	181	351	155		260	10	18
ENVIRONMENT/SOILS :																				
ECOLOGICAL MOISTURE REGIME		M	M	SHG	SHG	SHG	SHG	SHG	M	M	M	SHG	M	M	M	M	M	SHG	M	M
NUTRIENT REGIME		M	M	M	PM	M	M	SM	M	M	M	PM	PM	M	SM	M	M	M	M	M
OVERLYING MATERIAL		GFu	Ev	GL1	Mu	Mu	Mv		GF	GL1	LTu	Mu	GLu	Fv	GLv		GLb	GL1	Mv1	Lv
UNDERLYING MATERIAL			MI		LT		Rm	Mu	GL1					GL	RI	Mr	MI		GL	GF
EROSION/DEPOSITION									GL	GL								GL		
SOIL SUBGROUP		E	E	GLSZ	GLSZ	GL	GL	GLSZ	SZ	SZ	GLSZ	GL	O	O	O	O	O	SZ	O	O
SOIL GREAT GROUP		EB	DYB	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL
SOIL DRAINAGE		MW	MW	MW	MW	MW	MW	MW	MW	W	MW	MW	W	MW	MW	MW	MW	MW	MW	W
SOLUM THICKNESS(CM)	35.7	48	35	34	35	37	29	46	38	28	51	40	30	25	28	31	47	24	20	38
TYPE & DEPTH TO RESTRICT(CM)							B 90	B100												
THICKNESS LFH(CM)	5.6	5	6	3	5	4	4	5	8	5	5	7	4	4	3	4	4	8	6	5
pH-LFH	0.0																			
-A	5.7	5.0	5.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	8.0	7.0	5.0	7.0	5.0	5.0	5.0	5.0	5.0	6.0
-B	6.1	6.0	5.0	7.0	6.0	6.0	5.0	6.0	5.0	6.0	7.0	8.0	5.0	7.0	5.0	4.0	6.0	6.0	6.0	7.0
-C	7.1	6.0	4.0	8.0	8.0	8.0	6.0	8.0	8.0		6.0	8.0	4.0	8.0	8.0	5.0		7.0	7 0	8 0
TEXTURE-A/1		SI	SI	SIL	SIL	SIL	SI	SIL	SI	SIL	SI	SL	SL	SICL	SICL	SIL	L	SIL	SIL	SI
-B/2		SIL	SIL	C	SIC	SICL	CL	SICL	SICL	CL	CL	CL	SIC	SICL	SICL	CL	SICL	SICL	SICL	SIC
-C/3		C	SL	C	CL	CL	SIC	CL	C		C	CL	C	CL	SICL	SCL		SICL	SICL	SI
COARSE FRAGMENTS-B(%)	30.0				30	25						30								
SEEPAGE(*) & MOTTLING(CM)				19	14	11	8	1		8		0		*		19	16	5	20	
ROOTING DEPTH(CM)	0.0																			
VEGETATION :																				
ASSOCIATION																				
STAND AGE(YR)	61.7								42				55	27					65	80
CANOPY HEIGHT(M)	19.9	23	19	21	22	21	20	20	19	22	18	13	19	20	20	19	20	25	22	26
MEAN ANNUAL INCREMENT	0.0																			
STRATA COVERAGE(%)-A	55.8	65	45	65	60	50	50	35	55	65	60	80	35	50	40		55	50	40	65
-B	43.2	40	50	15	25	55	15	15	62	70	55	40	50	30	70	20	40	60	45	60
-C	37.4	40	60	50	15	15	40	15	40	50	25	30	30	35	20	45	25	60	40	25
-G	4.1	3	1	20	10	1	5	1	1	1	0	1	2	4	1	20	5	5	1	4
-D	4.8	1	0	1	2	35	15	5	2	1	0	2	5	1	2	1	1	1	2	0
-E	0.2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0
SURFACE SUBST(%)-DEAD WOOD	2.7	0	1	1	1	1	2	5	2	2	5	1	2	5	1	1	5	1	1	1
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	93.6	0	99	99	99	99	98	95	98	98	95	99	98	95	99	99	95	99	99	99
-OPEN WATER	0.0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0																			
-GRAMINOIDS	0.0																			
-BROWSE	0.0																			

APPENDIX C

SPECIES LIST

APPENDIX C

SPECIES LIST

A-Layer

Spp. Code	Latin Name	Common Name
ABIE BAL	**Abies balsamifera**	Balsam Fir
ABIE LAS	**Abies lasiocarpa**	Alpine Fir
BETU PAP	**Betula papyrifera**	Paper Birch
LARI LAR	**Larix laricina**	Tamarack
PICE ENE	**Picea engelmannii x P. glauca**	Engelmann-White Spruce Hybrid
PICE ENG	**Picea engelmannii**	Engelmann Spruce
PICE GLA	**Picea glauca**	White Spruce
PICE MAR	**Picea mariana**	Black Spruce
PINU BAN	**Pinus banksiana**	Jack Pine
PINU CON	**Pinus contorta v. latifolia**	Lodgepole Pine
POPU BAL	**Populus balsamifera**	Balsam Poplar
POPU TRE	**Populus tremuloides**	Trembling Aspen

B-Layer

Spp. Code	Latin Name	Common Name
ALNU CRI	**Alnus crispa**	Green Alder
ALNU TEN	**Alnus tenuifolia**	River Alder
AMEL ALN	**Amelanchier alnifolia**	Saskatoon Berry
BETU GLA	**Betula glandulosa**	Dwarf Birch
BETU OCC	**Betula occidentalis**	Water Birch
BETU PUM	**Betula pumila**	Swamp Birch
CORN STO	**Cornus stolonifera**	Red Osier Dogwood
CORY COR	**Corylus cornuta**	Beaked Hazelnut
JUNI COM	**Juniperus communis**	Ground Juniper
LEDU GRO	**Ledum groenlandicum**	Labrador Tea
LONI DIO	**Lonicera dioica**	Twining Honeysuckle
LONI INV	**Lonicera involucrata**	Bracted Honeysuckle
MENZ FER	**Menziesia ferruginea**	False Azalea
OPLO HOR	**Oplopanax horridum**	Devil's Club
PRUN PEN	**Prunus pensylvanica**	Pin Cherry
PRUN VIR	**Prunus virginiana**	Choke Cherry
RHOD ALB	**Rhododendron albiflorum**	White-flowered Rhododendron
RIBE AME	**Ribes americanum**	Wild Black Currant
RIBE HIR	**Ribes hirtellum**	Wild Gooseberry
RIBE INE	**Ribes inerme**	
RIBE LAC	**Ribes lacustre**	Bristly Black Currant
RIBE OXY	**Ribes oxyacanthoides**	Wild Gooseberry
RIBE TRI	**Ribes triste**	Wild Red Currant

Spp. Code	Latin Name	Common Name
ROSA ACI	**Rosa acicularis**	Prickly Rose
RUBA IDA	**Rubus idaeus**	Wild Red Raspberry
RUBU PAR	**Rubus parviflorus**	Thimbleberry
RUBU STR	**Ribis strigosus**	Wild Red Raspberry
SALI ARC	**Salix artica**	Arctic Willow
SALI ATH	**Salix athabascensis**	
SALI BAA	**Salix barratiana**	Barratt's Willow
SALI BAR	**Salix barklayii**	Barclay's Willow
SALI BEB	**Salix bebbiana**	Beaked Willow
SALI CAN	**Salix candida**	Hoary Willow
SALI DRU	**Salix drummondiana**	
SALI FAR	**Salix fariae**	
SALI GLA	**Salix glauca**	Smooth Willow
SALI LUC	**Salix lucida**	
SALI MEL	**Salix melanopsis**	
SALI MYR	**Salix myrtillifolia**	Myrtle-leaved Willow
SALI PED	**Salix pedicellaris**	Bog Willow
SALI PLA	**Salix planifolia**	Glaucous Bog Willow
SALI PYR	**Salix pyrifolia**	Balsam Willow
SALI RET	**Salix reticulata**	
SALI SCO	**Salix scouleriana**	
SALI STO	**Salix stolonifera**	
SAMB RAC	**Sambucus racemosa**	Elderberry
SHEP CAN	**Shepherdia canadensis**	Canadian Buffaloberry
SORB SCO	**Sorbus scopulina**	Mountain Ash
SPIR BET	**Spiraea betulifolia**	White Meadowsweet
SYMP ALB	**Symphoricarpos albus**	Snowberry
VACC MEM	**Vaccinium membranaceum**	Tall Bilberry
VACC MYR	**Vaccinium myrtolloides**	Blueberry
VIBU EDU	**Viburnum edule**	Lowbush Cranberry

C-Layer

Spp. Code	Latin Name	Common Name
ACHI MIL	**Achillea millefolium**	Common Yarrow
ACON DEL	**Aconitum delphinifolium**	Monk's Hood
ACTA RUB	**Actaea rubra**	Red Baneberry
ANDR POL	**Andromeda polifolia**	Bog Rosemary
ANEM LIT	**Anemone lithophila**	
ANEM PAR	**Anemone parviflora**	Small Wood Anemone
ANTE MED	**Antennaria media**	
ANTE MIC	**Antennaria microphylla**	
ANTE NEG	**Antennaria neglecta**	
ANTE NIT	**Antennaria nitida**	Pussytoes
ANTE RAC	**Antennaria racemosa**	Racemose Everlasting
ANTE ROS	**Antennaria roseus**	
ARAL NUD	**Aralia nudicaulis**	Wild Sarsaparilla
ARCT RUB	**Arctostaphylos rubra**	Alpine Bearberry
ARCT UVA	**Arctostaphylos uva-ursi**	Bearberry

Spp. Code	Latin Name	Common Name
ARNI CHA	**Arnica chamissonis**	Leafy Arnica
ARNI COR	**Arnica cordata**	Heart-leaved Arnica
ARNI LAT	**Arnica latifolia**	Mountain Arnica
ARNI RYD	**Arnica rydbergii**	
ARTE NOR	**Artemisia norvegica**	Mountain Sage
ASTE CIL	**Aster ciliolatus**	Lindley's Aster
ASTE CON	**Aster conspicuous**	Showy Aster
ASTE HES	**Aster hesperius**	Western Willow Aster
ASTE LAE	**Aster laevis**	Smooth Aster
ASTE PUN	**Aster puniceus**	Purple-Stemmed Aster
ASTE SIB	**Aster sibiricus**	Arctic Aster
ASTE SUB	**Aster subspicatus**	
ASTR AME	**Astragalus americanus**	
ASTR STR	**Astragalus striatus**	Ascending Purple Milk Vetch
ATHY FIL	**Athyrium felix-femma**	Lady Fern
BOTR VIR	**Botrychium virginianum**	
CAMP LAS	**Campanula lasiocarpa**	Alpine Harebell
CAMP ROT	**Campanula rotundifolia**	
CASS TET	**Cassiope tetragona spp. saximontana**	White Mountain Heather
CAST MIN	**Castilleja miniata**	Common Red Painthrush
CAST OCC	**Castilleja occidentalis**	
CERA ARV	**Cerastium arense**	Field Chickweed
CERA BEE	**Cerastium beeringianum**	
CERA SPP	**Cerastium** species	Chickweed
CLEM OCC	**Clematis occidentalis**	Purple Clematis
CORA TRI	**Corallorhiza trifida**	Pale Coral-root
CORN CAN	**Cornus canadensis**	Bunchberry
CYPR PAS	**Cypripodium passerinum**	
DELP GLA	**Delphinium glaucum**	Tall Larkspur
DISP TRA	**Disporum trachyearpum**	Fairy Bells
DRAB AUR	**Draba aurea**	
DRYA HOO	**Dryas hookeriana**	White Dryad
DRYO CAR	**Dryopteris carthusiana**	Narrow Spinulose Shield Fern
EMPE NIG	**Empetrum nigrum**	Crowberry
EPIL ANG	**Epilobium angustifolium**	Common Fireweed
EPIL CIL	**Epilobium ciliatum**	
EPIL LAT	**Epilobium latifolium**	Broad-leaved Fireweed
EPIL PAL	**Epilobium palustre**	Marsh Willow Herb
EQUI ARV	**Equisetum arvense**	Common Field Horsetail
EQUI HYE	**Equisetum hyemale**	Scouring Rush
EQUI PRA	**Equisetum pratense**	Meadow Horsetail
EQUI SCI	**Equisetum scirpoides**	Dwarf Scouring Rush
EQUI SYL	**Equisetum sylvaticum**	Woodland Horsetail
ERIG HUM	**Erigeron humilis**	
ERIG PER	**Erigeron peregrinus spp. callianthemus**	Wandering Daisy
FRAG VIR	**Fragaria virginiana**	Wild Strawberry
GALI BOR	**Galium boreale**	Northern Bedstraw
GALI LAB	**Galium labradoricum**	
GALI TRI	**Galium triflorum**	Sweet-Scented Bedstraw
GAUL HIS	**Gaultheria hispidula**	Creeping Snowberry

Spp. Code	Latin Name	Common Name
GENT AMA	**Gentionella amarella spp. acuta**	Felwort, Northern Gentian
GENT CAL	**Gentiana calycosa**	Mountain Gentian
GENT GLA	**Gentiana glauca**	Alpine Gentian
GENT PRO	**Gentiana prostrata v. americana**	Gentian
GENT PRP	**Gentianella propinqua**	Felwort
GEOC LIV	**Geocaulon lividum**	Bastard Toadflax
GERA RIC	**Geranium richardsonii**	Wild White Geranium
GERA VIC	**Geranium viscossimum**	Sticky Purple Geranium
GEUM ALL	**Geum allepicum v. stdrictum**	Yellow Avens
GEUM RIV	**Geum rivale**	Purple or Water Avens
GEUM TRI	**Geum triflorum**	Old Man's Whiskers, 3-Flowered Avens
GLYC STR	**Glyceria striata**	Fowl Manna Grass
GOOD OBL	**Goodyera oblongifolia**	Rattlesnake Plantain
GYMN DRY	**Gymnocarpium dryopteris**	Oak Fern
HABE HYP	**Habenaria hyperborea**	Northern Green Orchid
HABE OBT	**Habenaria obtusata**	Blunt-Leaved Orchid
HABE ORB	**Habenaria orbiculata**	Round-Leaved Orchid
HABE VIR	**Habenaria viridis v. bracteata**	Bracted Orchid
HALE DEF	**Habenia deflexa**	Spurred Gentian
HEDY ALP	**Hedysarum alpinum v. americanum**	American Hedysarum
HEDY SUL	**Hedysarum sulphurescens**	Yellow Hedysarum
HERA LAN	**Heracleum lanatum**	Cow Parsnip
HIER TRI	**Hieracium triste**	
HIER UMB	**Hieracium umbellatum**	
KALM POL	**Kalmia polifolia v. microphylla**	Swamp Laurel, Mountain Laurel
LATH OCH	**Lathyrus ochroleucus**	Cream-Colored Vetchling
LATH VEN	**Lathyrus venosus**	
LILI PHI	**Lilium philadelphicum**	Western Wood Lily
LINN BOR	**Linnaea borealis**	Twinflower
LIST BOR	**Listera borealis**	Northern Twayblade
LIST COR	**Listera cordata**	Heart-leaved Twayblade
LUPI SER	**Lupinus sericcus**	Perennial Lupine
LYCO ANN	**Lycopodium annotinum**	Stiff Club Moss
LYCO CLA	**Lycopidium clavatum**	Running Club Moss
LYCO COM	**Lycopodium complanatum**	Ground Cedar
MAIA CAN	**Maianthemum canadense**	Wild Lily-of-the-Valley
MELA LIN	**Melampyrum lineare**	
MENY TRI	**Menyanthes trifoliata**	Buckbean
MERT PAN	**Mertensia paniculata**	Tall Mertensia, Lungwort
MINU BIF	**Minuartia biflora**	
MINU OBT	**Minuartia obtusiloba**	
MITE NUD	**Mitella nuda**	Bishop's Cap, Mitrewort
MOEH LAT	**Moehringia lateriflora**	
MONE UNI	**Moneses uniflora**	One-Flowered Wintergreen
MYOS ALP	**Myosotis alpestris**	Alpine Forget-Me-Not
ORTH SEC	**Orthilia secunda**	One-Sided Wintergreen

Spp. Code	Latin Name	Common Name
OSMO CHI	**Osmorhiza chilensis**	
OSMO DEP	**Osmorhiza depauperata**	Sweet Cicely
OXYC MIC	**Oxycoccus microcarpus**	Small Bog Cranberry
OXYR DIG	**Oxyria digyna**	Mountain Sorrell
OXYT DEF	**Oxytropis deflexa**	Reflexed Locoweed
OXYT POD	**Oxytropis podiocarpa**	Bladder Locoweed
OXYT SPL	**Oxytropis splendens**	Showy Locoweed
PARN FIM	**Parnassia fimbriata**	Fringed Grass-of-Parnassus
PARN PAL	**Parnassia palustris v. neogaea**	Northern Grass-of-Parnassus
PEDI BRA	**Pedicularis bracteosa**	Bracted Lousewort
PEDI CAP	**Pedicularis capitata**	Large-Flowered Lousewort
PEDI LAB	**Pedicularis labradorica**	Labrador Lousewort
PEDI PAR	**Pedicularis parviflora**	Swamp Lousewort
PEDI SPP	**Pedicularis** species	Lousewort species
PENS PRO	**Penstemon procerus**	Slender Blue Beardtongue
PETA PAL	**Petasites palmatus**	Palmate-Leaved Coltsfoot
PETA SAG	**Petasites sagittatus**	Arrow-Leaved Coltsfoot
PHYL EMP	**Phyllodoce empetriformis**	Red/Purple Heather
POLE PUL	**Polemonium pulcherrimum**	Jacob's Ladder
POLY VIV	**Polygonum viviparum**	Bistort
POTE DIV	**Potentilla diversifolia**	Smooth-Leaved Cinquefoil
POTE GRA	**Potentilla gracilis**	Graceful Cinquefoil
POTE HOO	**Potentilla hookeriana**	
POTE PAL	**Potentilla palustris**	Marsh Cinquefoil
PYRO ASA	**Pyrola asarifolia**	Common Pink Wintergreen
PYRO SEC	**Pyrola secunda**	One-Sided Wintergreen
PYRO CHL	**Pyrola chlorantha**	Greenish-Flowered Wintergreen
PYRO MIN	**Pyrola minor**	Lesser Wintergreen
RANU OCC	**Ranunculus occidentalis**	Western Buttercup
RUBU ACR	**Rubus arcticus**	Dwarf Raspberry
RUBU CHA	**Rubus chamaemorus**	Cloudberry
RUBU FAA	**Rubus paracaulis**	
RUBU PED	**Rubus pedatus**	Dwarf Bramble
RUBU PUB	**Rubus pubescens**	Dewberry, Running Raspberry
RUME ALP	**Rumex alpostris**	Green Sorrell
SAXI TRI	**Saxifraga tridentata**	Purple Saxifrage
SELA SEL	**Selaginella selaginoides**	Little Club Moss
SENE IND	**Senecio indecorus**	Rayless Ragwort
SENE TRI	**Senecio triangularis**	Brook Ragwort
SIBB PRO	**Sibbaldia procumbens**	Sibbaldia
SILE ACA	**Silene acaulis v. exscapa**	Moss Campian
SMIL RAC	**Smilacina racemosa**	False Solomon's Seal
SMIL STE	**Smilacina stellata**	Star-Flowered Solomon's Seal
SMIL TRI	**Smilacina trifolia**	Three-Leaved Solomon's Seal
SOLI CAN	**Solidago canadensis**	Canada Goldenrod
SOLI DEC	**Solidago decumbens**	Mountain Goldenrod
SOLI LEP	**Solidago lepida**	Mountain Goldenrod

Spp. Code	Latin Name	Common Name
SOLI MUL	**Solidago multiradiata**	Alpine Goldenrod
SOLI NEM	**Solidago nemoralis v. decemflora**	Showy Goldenrod
SOLI SPA	**Solidago spathulata**	
SOLI SPP	**Solidago** species	Goldenrod
SPIR ROM	**Spiranthes romanzoffiana**	Lady's Tresses
STEL CAL	**Stellaria calycantha**	Northern Stitchwort
STEL LOG	**Stellaria longipes**	Long-Stalked Chickweed
STEL LON	**Stellaria longifolia**	Long-Leaved Chickweed
STEL MED	**Stellaria media**	Common Chickweed
STEN OCC	**Stenanthium occidentale**	Bronze Bells
STRE AMP	**Streptopus amplexifolius**	Twisted Stalk
STRE ROS	**Streptopus roseus**	
TARA OFF	**Taraxacum officinalis**	Common Dandelion
THAL OCC	**Thalictrum occidentale**	Western Meadow Rue
THAL VEN	**Thalictrum venulosum**	Veiny Meadow Rue
TIAR TRI	**Tiarella trifoliata**	False Mitrewort
TIAR UNI	**Tiarella unifoliata**	Sugarscoop, False Mitrewort
TROL ALB	**Trollius albiflorus**	Globe Flower
VACC CAE	**Vaccinium caespitosum**	Dwarf Bilberry
VACC MYT	**Vaccinium myrtillus**	Low Bilberry
VACC VIT	**Vaccinium vitis-idaea v. minus**	Bog Cranberry
VALE DIO	**Valeriana dioca**	Valerian
VALE SIT	**Valeriana sitchensis**	Mountain Heliotrope
VERA ESC	**Veratrum eschscholtzii**	False Hellebore
VERO ALP	**Veronica alpina v. unalaschensis**	Alpine Speedwell
VERO SER	**Veronica serpyllifolia**	
VICI AME	**Vicia americana**	Wild Vetch
VIOL ADU	**Viola adunca**	Early Blue Violet
VIOL CAN	**Viola canadensis**	Western Canada Violet
VIOL NEP	**Viola nephrophylla**	Bog Violet
VIOL ORB	**Viola orbiculata**	Evergreen Violet
VIOL PAL	**Viola palustris**	Marsh Violet
VIOL REN	**Viola renifolia**	Kidney-Leaved Violet
VIOL RUG	**Viola rugulosa**	Western Canada Violet
ZYGA ELE	**Zygadenus elegans**	White Camas

D-Layer

Spp. Code	Latin Name	Common Name
ALEC SAR	**Alectoria sarmentosa**	
AMBL SER	**Amblystegium serpens**	
AULA PAL	**Aulacomnium palustre**	
BARB HAT	**Barbilophoza hatcheri**	
BARB LYC	**Barbilophoza lycopodioides**	
BAZZ TRI	**Bazzania trilobata**	
BRAC ALB	**Brachythecium albicans**	

Spp. Code	Latin Name	Common Name
BRAC CAM	**Brachytecium campestre**	
BRAC GRO	**Brachythecium groenlandicum**	
BRAC HYL	**Brachytecium hylotapetum**	
BRAC LEI	**Brachythecium leibergii**	
BRAC MIL	**Brachytecium mildianum**	
BRAC SAL	**Brachytecium salebrosum**	
BRAC SPP	**Brachytecium** species	
BRAC STA	**Brachytecium starkei**	
BRYO CAP	**Bryoria capillaris**	
BRYO FRE	**Bryoria fremontii**	
BRYO FUR	**Bryoria furcellata**	
BRYO FUS	**Bryoria fuscencens**	
BRYU PSE	**Bryum pseudotriquetrum**	
CALL GIG	**Calliergon giganteum**	
CAMP HIS	**Campylium hispidulum**	
CAMP STE	**Campylium stellatum**	
CATA NIG	**Catoscopium nigritum**	
CERA PUR	**Ceratodon purpureus**	
CETR CUC	**Cetraria cucullata**	
CETR HAL	**Cetraria halai**	
CETR ISL	**Cetraria islandica**	
CETR MER	**Cetraria merrillii**	
CETR NIV	**Cetraria nivalis**	
CLAD MIT	**Cladina mitis**	
CLAD RAN	**Cladina rangiferina**	
CLAD STE	**Cladina stellaris**	
CLAD CAP	**Cladonia capitata**	
CLAD CEN	**Cladonia cenotea**	
CLAD CHL	**Cladonia chlorophaea**	
CLAD COC	**Cladonia coccifera**	
CLAD CON	**Cladonia conista**	
CLAD COR	**Cladonia cornuta**	
CLAD CRI	**Cladonia crispata**	
CLAD DEF	**Cladonia deformis**	
CLAD ECM	**Cladonia ecmocyna**	
CLAD FIM	**Cladonia fimbriata**	
CLAD GON	**Cladonia gonecha**	
CLAD GRA	**Cladonia gracilis**	
CLAD PHY	**Cladonia phyllophora**	
CLAD PLE	**Cladonia pleurota**	
CLAD PYX	**Cladonia pyxidata**	
CLAD SPP	**Cladonia** species	
CLAD SQU	**Cladonia squamesa**	
CLAD UNC	**Cladonia uncialis**	
CLIM DEN	**Climacium dendroides**	
DACT ARC	**Dactrylina arctica**	
DICR ACU	**Dicranum acutifolium**	
DICR BRE	**Dicranum brevifolium**	
DICR FLA	**Dicranum flagellara**	
DICR FRA	**Dicranum fragilifolium**	
DICR FUS	**Dicranum fuscescens**	
DICR POL	**Dicranum polysetum**	

Spp. Code	Latin Name	Common Name
DICR SCO	**Dicranum scoparium**	
DICR SPP	**Dicranum** species	
DICR UND	**Dicranum undulatum**	
DREP REV	**Drepanocladus revolvens**	
DREP UNC	**Drepanocladus uncinatus**	
EURH PUL	**Eurhynchium pulchellum v. praecox**	
EVER MES	**Evernia mesomorphia**	
HELO BLA	**Helodium blandowii**	
HYLO SPL	**Hylocomnium splendens**	
HYPO AUS	**Hypogymnia austerodes**	
HYPO BIT	**Hypogymnia bitteri**	
HYPO ENT	**Hypogymnia enteromorpha**	
HYPO PHY	**Hypogymnia physodes**	
HYPO TUB	**Hypogymnia tubulosa**	
HYPN PRA	**Hypnum pratense**	
HYPN SPP	**Hypnum** species	
ICMA ERA	**Icmadophila eracetorum**	
JAME AUT	**Jamesoniella automnalis**	
LECA RUB	**Lecanora rubina**	
LEPI REP	**Lepidozia reptans**	
LEPT PYR	**Leptobryum syriforme**	
LETH VUL	**Letharia vulpina**	
LOBA LIN	**Lobaria linita**	
LOBA PUL	**Lobaria pulmonaria**	
LOPH BIN	**Lophozia binsteadii**	
LOPH POR	**Lophozia porphyroleuca**	
LOPH VEN	**Lophozia ventricosa**	
MNIU AFF	**Mnium affine**	
MNIU ARI	**Mnium arizonicum**	
MNIU SPI	**Mnium spinulosum**	
NEPH BEL	**Nephroma bellum**	
NEPH EXP	**Nephroma expallidum**	
PALU SQU	**Paludella squarrosa**	
PARM CHL	**Parmelia chlorachoa**	
PARM SUL	**Parmelia sulcata**	
PARM ALE	**Parmeliopsis aleurites**	
PARM AMB	**Parmeliopois ambigua**	
PARM HYP	**Parmeliopsis hyperopta**	
PELT APH	**Peltigera aphthosa**	
PELT CAN	**Peltigera canina**	
PELT MAL	**Peltigera malacea**	
PELT POL	**Peltigera polydactyla**	
PHYS ADS	**Physcia adscendens**	
PLAG DRU	**Plagiomnium drummondii**	
PLAG ELL	**Plagiomnium ellipticum**	
PLAG MED	**Plagiomnium medium**	
PLEU SCH	**Pleurozium schreberi**	
POHL NUT	**Pohlia nutans**	
POLY JUN	**Polytrichum juniperinum**	
POLY PIL	**Polytrichum piliferum**	
POLY STR	**Polytrichum strictum**	

Spp. Code	Latin Name	Common Name
PTIL CIL	**Ptilidium ciliare**	
PTIL PUL	**Ptilidium pulcherrimun**	
PTIL CRI	**Ptilium crista-castrensis**	
PYLA POL	**Pylaisiella polifera**	
RAMA FAS	**Ramilina fastigiata**	
RAMA THR	**Ramilina thrausta**	
RHIZ GRA	**Rhizomnium gracile**	
RHIZ PSE	**Rhizomnium pseudopunctatum**	
RHYT TRI	**Rhytidiadelphus triquestrus**	
SPHA ANG	**Sphagnum angustifolium**	
SPHA FUS	**Sphagnum fuscum**	
SPHA GIR	**Sphagnum girgensohnii**	
SPHA MAG	**Sphagnum magellanicum**	
SPHA NEM	**Sphagnum nemoreum**	
SPHA RUS	**Sphagnum russowii**	
SPHA TER	**Sphagnum teres**	
SPHA WAR	**Sphagnum warnstorfii**	
SPLA SPH	**Splachnum sphaericum**	
STER TOM	**Stereocaulon tomentosum**	
TETR MNI	**Tetrapladon mnioides**	
TETR PEL	**Tetraphis pellucida**	
THAM SUB	**Thamnolia subuliformis**	
THUI ABI	**Thuidium abietinum**	
THUI REC	**Thuidium recognitum**	
TIMM AUS	**Timmia austriaca**	
TOME NIT	**Tomenthypnum nitens**	
TONI COE	**Toninia coeruleonigricans**	
TORT NOR	**Tortula norvegica**	
TORT RUR	**Turtula ruralis**	
TRIT EXS	**Tritomaria exsecta**	
USNE ALP	**Usnea alpina**	
USNE CAU	**Usnea cavernosa**	
USNE GLA	**Usnea glabrata**	
USNE SOR	**Usnea soredia**	
USNE SUB	**Usnea subfloridana**	

E-Layer

Spp. Code	Latin Name	Common Name
AGRO SCA	**Agrostis scabra**	Hair Grass, Tickle Grass
AGRO SUB	**Agropyron subsecundum**	Bearded Wheat Grass
AGRO TRA	**Agropyron trachycaulum**	Slender Wheat Grass
BROM INE	**Bromus inermis**	Awnless Brome
CALA CAN	**Calamagrostis canadensis**	Bluejoint, Marsh Reed Grass
CALA INE	**Calamagrostis inexpansa**	Northern Reed Grass
CALA STR	**Calamagrostis stricta**	Narrow Reed Grass
CARE ALB	**Carex albo-nigra**	
CARE AQU	**Carex aquatilis**	Water Sedge
CARE BRU	**Carex brunnescens**	Brownish Sedge

Spp. Code	Latin Name	Common Name
CARE CAP	**Carex capillaris**	
CARE CHO	**Carex chordorrhiza**	Prostrate Sedge
CARE COC	**Carex concinnoides**	
CARE CON	**Carex concinna**	Beautiful Sedge
CARE DIA	**Carex diandra**	Two-Stemmed Sedge
CARE DIS	**Carex disperma**	Two-Seeded Sedge
CARE GYN	**Carex gynocrates**	Northern Bog Sedge
CARE MAC	**Carex macloviana**	Thick-Spiked Sedge
CARE MIC	**Carex microglochin**	
CARE NIG	**Carex nigricans**	Blackening Sedge
CARE PAP	**Carex paupercaula**	
CARE PAU	**Carex pauciflora**	Few-Flowered Sedge
CARE PEN	**Carex pensylvania**	
CARE PRA	**Carex praticola**	
CARE ROS	**Carex rossi**	Ross' Sedge
CARE ROT	**Carex rostrata**	Beaked Sedge
CARE SCI	**Carex scirpoides**	
CARE SIC	**Carex siccada**	
CARE TEN	**Carex tenuiflora**	Thin Flowered Sedge
CARE TOL	**Carex tolmiei**	
CARE VAG	**Carex vaginata**	Sheathed Sedge
DANT CAL	**Danthonia californica**	
DESC CES	**Deschampsia cespitosa**	Tufted Hair Grass
ELYM INN	**Elymus innovatus**	Hairy Wild Rye
ERIO CHA	**Eriophorum chamissonis**	Russett Cotton Grass
ERIO VAG	**Eriophorum vaginatum**	
ERIO VIR	**Eriophorum viridi-carinatum**	Thin-Leaved Cotton Grass
FEST SAX	**Festuca saximontana**	
HIER ODO	**Hierochloe odorata**	Sweet Grass
JUNC BAL	**Juncus balticus**	Wire Rush
JUNC DRU	**Juncus drummondii**	Drummond's Rush
KOBR MYO	**Kobresia myosuroides**	Bog Sedge
LUZU PAR	**Luzula parviflora**	Small-Flowered Wood Rush
LUZU PIP	**Luxula piperi**	
ORYZ ASP	**Oryzopsis asperifolia**	Northern Rye Grass
ORYZ EXI	**Oryzopsis exigera**	
ORYZ SPE	**Oryzopsis species**	
PHLE COM	**Phleum commutatum**	Mountain Timothy
POA ALP	**Poa alpina**	Alpine Bluegrass
POA COM	**Poa compressa**	Canada Bluegrass
POA PAL	**Poa palustris**	Fowl Bluegrass
POA PRA	**Poa pratensis**	Kentucky Bluegrass
SCHI PUR	**Schizachne purparescens**	False Melic
SCIR CAE	**Scripus caespitosus v. callosus**	Tufted Bulrush
TRIS SPI	**Trisetum spicatum**	Spike Trisetum

APPENDIX D

PLANT ASSOCIATION TABLES

V E G E T A T I O N T A B L E S

RESOURCE INVENTORY
EDMONTON, ALBERTA

02:01:08 NOV 22, 1984

RESEARCH BRANCH

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NO CODING ERRORS IN DATA SET
TOTAL NUMBER OF PLOTS IS 402
TOTAL NUMBER OF SPECIES IN EACH LAYER IS  16  22  49  28  81 222  91 109  57
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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984
TABLE 1 PAGE 1

	AVERAGE		3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	VALUE		P093	P091	P133	P213	P214	P108	P211	P205	P08A	P198	P212	P160	P150	P098	P115
NUMBER OF SPECIES PER PLOT	31.7		28	24	30	35	38	40	36	32	26	26	33	35	31	35	36
SPECIES	%P	MC	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV
A1 LAYER																	
1 POPU TRE	100.0	44.4	50 2	25 2	60 2	50 2	35 2	50 2	35 2	50 2	60 2	50 2	65 2	30 2	50 2	35 2	45 2
2 POPU BAL	44.4	3.9	15 2			10 2	1 2					2 2	1 2	5 2	2 2		
3 PICE GLA	25.9	0.4					2 2		1 2					1 2			
4 PINU CON	11.1	0.6					5 2										
A2 LAYER																	
POPU TRE	96.3	5.1	1 2	15 2	5 2	2 2	5 2	1 2	2 2	5 2	5 2	10 2	1 2	5 2	3 2	2 2	5 2
PICE GLA	48.1	1.3	1 2					1 2	5 2	2 2				1 2	1 2	5 2	
POPU BAL	37.0	1.5				1 2	1 2						15 2	2 2	3 2		
5 BETU PAP	18.5	0.3	3 2											1 2		1 2	
PINU CON	7.4	0.1															
6 SALI SCO	3.7	0.2		5 2													
7 ABIE LAS	3.7	0.0															
8 ALNU CRI	3.7	0.0		1 2													
9 SALI BEB	3.7	0.0												1 2			
B1 LAYER																	
PICE GLA	40.7	0.7				1 2	1 2			2 2							1 2
POPU TRE	29.6	0.7					1 2				1 2				2 2		
BETU PAP	18.5	0.3										1 2		1 2			
POPU BAL	18.5	0.3			2 2	1 2	1 2								3 2		
ALNU CRI	14.8	0.9		15 2				1 2			5 2						
SALI BEB	14.8	0.6										3 2	10 2	3 2			
10 ALNU TEN	3.7	0.4															
11 BETU OCC	3.7	0.1														2 2	
12 PRUN VIR	3.7	0.0														1 2	
B2 LAYER																	
13 ROSA ACI	100.0	12.7	10 2	1 2	10 2	7 2	1 2	3 2	2 2	13 2	37 2	17 2	4 2	20 2	13 2	13 2	8 2
14 VIBU EDU	88.9	8.0	13 2	13 2	3 2		5 2	1 2	6 2	17 2	8 2	5 2	7 2	2 2		25 2	1 2
15 LONI INV	70.4	3.4		5 2		2 2		2 2	1 2	1 2			6 2	4 2	2 2	6 2	
16 SHEP CAN	66.7	7.5			1 2	12 2	37 2	5 2	3 2	10 2			3 2	15 2	1 2	25 2	10 2
17 SPIR BET	59.3	2.8		4 2	2 2		5 2	3 2	2 2	7 2	5 2			3 2	1 2	13 2	10 2
18 AMEL ALN	40.7	0.9						1 2	1 2	2 2		5 2					
POPU TRE	37.0	0.6			1 2	1 2				1 2							1 2
PICE GLA	33.3	0.3			1 2	1 2	1 2	1 2					1 2				
19 CORN STO	29.6	1.3									3 2	1 2	5 2	1 2			
20 RUBU IDA	29.6	0.9	10 2	5 2							1 2	1 2			1 2		
21 SYMP ALB	22.2	0.7								2 2		2 2	1 2		1 2		
22 VACC MYR	18.5	0.9						1 2	1 2								5 2
POPU BAL	18.5	0.3				1 2									3 2		
23 LEDU GRO	11.1	0.3				5 2								2 2			
SALI BEB	11.1	0.2				1 2								1 2			3 2
ALNU CRI	7.4	1.0		25 2				1 2									
24 SALI SPP	7.4	0.4								9 2						2 2	
PRUN VIR	7.4	0.2															
25 RIBE OXY	7.4	0.2	5 2														
BETU OCC	7.4	0.1														1 2	
26 RIBE LAC	7.4	0.1															
SALI SCO	7.4	0.1				1 2											

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984
TABLE 1 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P093		3G P091		3G P133		3G P213		3G P214		3G P108		3G P211		3G P205		3G P08A		3G P198		3G P212		3G P160		3G P150		3G P098		3G P115	
NUMBER OF SPECIES PER PLOT	31.7		28		24		30		35		38		40		36		32		26		26		33		35		31		35		36	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
27 CORY COR	3.7	0.7																			20	2										
28 RUBU PED	3.7	0.2																									6	2				
29 SALI GLA	3.7	0.2																											6	2		
30 VACC CAE	3.7	0.1																											3	2		
BETU PAP	3.7	0.0																													1	2
31 PICE MAR	3.7	0.0																													1	2
32 RIBE SPP	3.7	0.0																							1	2						
33 RIBE TRI	3.7	0.0																	1	2												
34 SALI DIS	3.7	0.0											1	2																		
35 SALI DRU	3.7	0.0																														
36 SHEP ARG	3.7	0.0																														
C LAYER																																
37 LATH OCH	92.6	2.0	5	2			3	2	1	2	1	2	2	2	1	2	2	2	5	2	1	2	1	2	1	2	2	2	1	2	3	2
38 RUBU PUB	88.9	2.0	1	2	2	2	2	2	1	2	1	2	1	2	1	2	1	2	3	2	3	2	2	2	1	2			1	2		
39 CORN CAN	85.2	7.3	2	2			15	2	3	2	3	2	10	2	4	2	5	2			1	2	1	2	12	2			9	2	10	2
40 FRAG VIR	85.2	1.4					1	2	3	2	1	2	1	2	1	2	1	2	3	2			2	2	3	2	1	2	2	2	2	2
41 GALI BOR	81.5	0.9	1	2			1	2	1	2	1	2					1	2	1	2	1	2	1	2	2	2	1	2	1	2	1	2
42 EPIL ANG	77.8	4.1			4	2	10	2			1	2	3	2	1	2	4	2	8	2	2	2	4	2			9	2	1	2	2	2
43 ASTE CON	77.8	3.5	1	2			5	2			1	2	2	2			8	2	5	2	6	2	4	2	1	2	8	2	1	2	1	2
44 MAIA CAN	77.8	1.0	1	2	3	2	1	2	1	2	1	2	1	2	1	2	2	2			1	2			1	2	2	2	2	2	1	2
45 PETA PAL	74.1	1.3	1	2			1	2	7	2	1	2	4	2	1	2	1	2			1	2	1	2	1	2	2	2	1	2	2	2
46 LINN BOR	70.4	1.6					3	2	1	2	1	2	1	2	1	2	1	2			1	2	3	2	5	2			1	2	3	2
47 PYRO ASA	70.4	1.3	9	2	1	2	1	2	1	2	6	2	1	2	1	2	3	2	1	2	1	2	1	2	1	2			1	2	2	2
48 VICI AME	55.6	0.6	1	2			1	2	1	2					1	2	2	2	1	2					1	2	1	2			2	2
49 ARAL NUD	51.9	6.3	20	2	41	2							4	2	1	2	7	2	12	2	8	2									21	2
50 MERT PAN	51.9	1.4	3	2											1	2	8	2	2	2			1	2			4	2			1	2
51 VIOL REN	40.7	0.5	1	2	3	2					1	2	1	2	1	2							1	2								
52 EQUI SYL	40.7	0.4							1	2			1	2	1	2	1	2	1	2	1	2			1	2			1	2		
53 ORTH SEC	40.7	0.4					1	2	1	2	1	2	1	2									1	2	1	2					1	2
54 ARNI COR	37.0	0.4	1	2			1	2					2	2			1	2	1	2									1	2	1	2
55 MITE NUD	29.6	0.3			2	2			1	2					1	2					1	2										
VACC CAE	25.9	0.6					2	2	1	2	1	2	4	2	1	2																
56 ASTE CIL	25.9	0.4					1	2			1	2			1	2							3	2			2	2				
57 EQUI PRA	22.2	0.3	1	2																							1	2				
58 ARCT UVA	14.8	0.3					5	2			1	2	1	2	1	2																
59 ACHI MIL	14.8	0.1																					1	2			1	2				
60 CAST MIN	14.8	0.1							1	2			1	2	1	2																
61 HIER UMB	14.8	0.1											1	2															1	2		
62 VACC VIT	14.8	0.1					1	2			1	2			1	2																
63 VALE DIO	14.8	0.1															1	2														
64 VIOL CAN	11.1	0.2																			1	2					3	2				
65 EQUI ARV	11.1	0.1									1	2																				
66 THAL VEN	7.4	0.2																									3	2				
67 ASTE SPP	7.4	0.1																	1	2												
68 DISP TRA	7.4	0.1			1	2																										
69 EQUI SCI	7.4	0.1																					1	2								
70 PYRO MIN	7.4	0.1																														
71 SMIL RAC	7.4	0.1			3	2																										

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984
TABLE 1 PAGE 3

PLOT NUMBER	AVERAGE VALUE		3G P093		3G P091		3G P133		3G P213		3G P214		3G P108		3G P211		3G P205		3G P08A		3G P198		3G P212		3G P160		3G P150		3G P098		3G P115	
NUMBER OF SPECIES PER PLOT	31.7		28		24		30		35		38		40		36		32		26		26		33		35		31		35		36	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
72 CYPR PAS	3.7	0.1																														
73 GALI TRI	3.7	0.1			2	2																										
74 HIER ODO	3.7	0.1																														
75 OSMO DEP	3.7	0.1			3	2																										
76 ACTA RUB	3.7	0.0																	1	2												
77 GOOD OBL	3.7	0.0					1	2																								
78 GYMN DRY	3.7	0.0																														
79 LYCO COM	3.7	0.0																													1	2
80 MOEH LAT	3.7	0.0																														
81 SOLI SPA	3.7	0.0																														
82 STEL MED	3.7	0.0																													1	2
G LAYER																																
83 CALA STR	55.6	1.9	2	2	1	2			1	2							1	2	1	2					2	2			1	2	19	2
84 ELYM INN	48.1	2.1	2	2			20	2	9	2	1	2	3	2	1	2											4	2	1	2	4	2
85 CALA CAN	25.9	0.3	1	2									1	2	1	2							1	2								
86 CARE SPP	7.4	0.1	1	2	1	2																										
87 CARE CAP	3.7	0.0																					1	2								
88 ORYZ SPE	3.7	0.0																														
89 SCHI PUR	3.7	0.0																														
D LAYER																																
90 HYLO SPL	44.4	2.3							1	2	8	2	8	2	1	2							1	2	3	2					1	2
91 BRAC SAL	29.6	0.4	1						1	2			2	2	1	2									2	2	1	2	2	2		
92 PLEU SCH	25.9	1.3									24	2	2	2															1	2	1	2
93 BRAC STA	14.8	0.3															2	2														
94 PTIL CRI	14.8	0.1									1	2	1	2																		
95 AULA PAL	11.1	0.1													1	2															1	2
96 DICR UND	7.4	0.1									1	2																				
97 DREP UNC	7.4	0.1																														
98 EURH PUL	7.4	0.1					1	2															1	2								
99 PLAG ELL	7.4	0.1																														
100 PLAG MED	7.4	0.1																											1	2		
101 POLY JUN	7.4	0.1											1	2																	1	2
102 BRAC SPP	3.7	0.0																														
103 BRYU PSE	3.7	0.0																														
104 DICR SCO	3.7	0.0																											1	2		
105 PLAD MED	3.7	0.0							1	2																						
106 POLY STR	3.7	0.0																														
107 RHIZ PSE	3.7	0.0																													1	2
VICI AME	3.7	0.0																	1	2												
L LAYER																																
108 PELT APH	7.4	0.1									1	2																				
109 PELT MAL	7.4	0.1																					1	2								
110 CLAD FUS	3.7	0.0																														
111 CLAD GRA	3.7	0.0																														
112 PELT CAN	3.7	0.0																														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	3G		3G		3G		3G		3G		3G		3G		3G		3G		3G		3G		3G	
PLOT NUMBER	P007		P011		P015		P201		P129		P203		P206		P166		P199		P208		P210		P009	
NUMBER OF SPECIES PER PLOT	27		37		31		31		26		30		33		20		21		31		39		44	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																								
1 POPU TRE	40	2	40	2	25	2	60	2	10	2	60	2	25	2	60	2	50	2	70	2	40	2	30	2
2 POPU BAL							10	2	40	2			15	2	2	2			2	2				
3 PICE GLA			1	2			2	2											2	2	1	2		
4 PINU CON					10	2															1	2		
A2 LAYER																								
POPU TRE	15	2	2	2	5	2	1	2	3	2	5	2	10	2	20	2			5	2	1	2	5	2
PICE GLA			5	2					1	2	1	2					3	2			3	2	5	2
POPU BAL									3	2			5	2	5	2	5	2	1	2				
5 BETU PAP																	1	2					1	2
PINU CON					2	2															1	2		
6 SALI SCO																								
7 ABIE LAS																					1	2		
8 ALNU CRI																								
9 SALI BEB																								
B1 LAYER																								
PICE GLA			1	2			1	2			2	2					2	2	1	2	1	2	5	2
POPU TRE	1	2			3	2	5	2			2	2											3	2
BETU PAP																	1	2			1	2	5	2
POPU BAL							1	2																
ALNU CRI																							2	2
SALI BEB	1	2																						
10 ALNU TEN													10	2										
11 BETU OCC																								
12 PRUN VIR																								
B2 LAYER																								
13 ROSA ACI	30	2	30	2	12	2	28	2	15	2	10	2	18	2	15	2	2	2	13	2	2	2	10	2
14 VIBU EDU			10	2	12	2	15	2	10	2	25	2	1	2	15	2	5	2	10	2	4	2	3	2
15 LONI INV	10	2	10	2	2	2	3	2			3	2	4	2			20	2	3	2	2	2	5	2
16 SHEP CAN			5	2	8	2					15	2	2	2					35	2	1	2	15	2
17 SPIR BET					2	2			3	2	2	2							13	2	1	2		
18 AMEL ALN			2	2			3	2			3	2			2	2			3	2	1	2	2	2
POPU TRE	3	2			1	2	4	2	1	2	1	2			2	2								
PICE GLA			1	2			1	2					1	2					1	2				
19 CORN STO					5	2							13	2	5	2	2	2						
20 RUBU IDA							3	2							1	2	2	2						
21 SYMP ALB			10	2			2	2																
22 VACC MYR																					1	2	15	2
POPU BAL							1	2					1	2					1	2				
23 LEDU GRO																							1	2
SALI BEB																								
ALNU CRI																								
24 SALI SPP																								
PRUN VIR													5	2			1	2						
25 RIBE OXY													1	2										
BETU OCC					1	2																		
26 RIBE LAC									1	2							2	2						
SALI SCO																							1	2

University of Alberta

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	3G		3G		3G		3G		3G		3G		3G		3G		3G		3G		3G		3G	
PLOT NUMBER	P007		P011		P015		P201		P129		P203		P206		P166		P199		P208		P210		P009	
NUMBER OF SPECIES PER PLOT	27		37		31		31		26		30		33		20		21		31		39		44	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
27 CORY COR																								
28 RUBU PED																								
29 SALI GLA																								
30 VACC CAE																								
BETU PAP																								
31 PICE MAR																								
32 RIBE SPP																								
33 RIBE TRI																								
34 SALI DIS																								
35 SALI DRU					1	2																		
36 SHEP ARG													1	2										
C LAYER	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
37 LATH OCH	3	2	1	2	4	2	1	2	5	2	4	2	2	2	1	2			2	2	1	2	1	2
38 RUBU PUB	1	2	7	2	2	2	5	2	1	2	3	2	6	2	5	2			2	2	1	2	2	2
39 CORN CAN	4	2	8	2	13	2	4	2			12	2	1	2	60	2	2	2	10	2	4	2	5	2
40 FRAG VIR	1	2	1	2	3	2	2	2	2	2	1	2	2	2	2	2			1	2	1	2	1	2
41 GALI BOR	1	2	1	2	1	2	1	2	1	2	1	2	1	2					1	2	1	2	1	2
42 EPIL ANG			6	2	5	2	7	2	14	2	7	2			10	2			8	2	3	2	1	2
43 ASTE CON			3	2			1	2	25	2	6	2	2	2	5	2	3	2	6	2			1	2
44 MAIA CAN	1	2	1	2	1	2	2	2	1	2	1	2							1	2			1	2
45 PETA PAL	1	2	1	2	3	2					1	2	1	2							3	2	2	2
46 LINN BOR	1	2	2	2	3	2	5	2			4	2							2	2	1	2	5	2
47 PYRO ASA									1	2			1	2	1	2			1	2	1	2		
48 VICI AME					1	2			1	2	1	2	1	2					1	2	1	2		
49 ARAL NUD					5	2					10	2	8	2	25	2	5	2					2	2
50 MERT PAN			2	2			2	2	1	2			10	2			2	2	1	2	1	2		
51 VIOL REN			1	2	1	2	1	2													1	2	1	2
52 EQUI SYL									1	2	1	2			1	2								
53 ORTH SEC			1	2					1	2									1	2	1	2		
54 ARNI COR			2	2															1	2	1	2		
55 MITE NUD			1	2			1	2			1	2									1	2		
VACC CAE																					4	2	4	2
56 ASTE CIL	1	2																			1	2		
57 EQUI PRA			1	2	2	2							1	2									1	2
58 ARCT UVA																								
59 ACHI MIL	1	2											1	2										
60 CAST MIN																							1	2
61 HIER UMB			1	2																			1	2
62 VACC VIT																							1	2
63 VALE DIO							1	2			1	2											1	2
64 VIOL CAN									1	2														
65 EQUI ARV	2	2															1	2						
66 THAL VEN			3	2																				
67 ASTE SPP					1	2																		
68 DISP TRA																			1	2				
69 EQUI SCI													2	2										
70 PYRO MIN			1	2																			1	2
71 SMIL RAC													1	2										

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	1	

POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	3G P007		3G P011		3G P015		3G P201		3G P129		3G P203		3G P206		3G P166		3G P199		3G P208		3G P210		3G P009	
NUMBER OF SPECIES PER PLOT	27		37		31		31		26		30		33		20		21		31		39		44	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
72 CYPR PAS													2	2										
73 GALI TRI																								
74 HIER ODO																	2	2						
75 OSMO DEP																								
76 ACTA RUB																								
77 GOOD OBL																								
78 GYMN DRY																	1	2						
79 LYCO COM																								
80 MOEH LAT	1	2																						
81 SOLI SPA	1	2																						
82 STEL MED																								
G LAYER																								
83 CALA STR	4	2	1	2	1	2	1	2			1	2			10	2							4	2
84 ELYM INN			1	2			3	2	5	2									2	2				
85 CALA CAN									1	2							1	2			1	2		
86 CARE SPP																								
87 CARE CAP																								
88 ORYZ SPE			1	2																				
89 SCHI PUR			1	2																				
D LAYER																								
90 HYLO SPL					2	2					1	2	1	2							22	2	12	2
91 BRAC SAL									1	2														
92 PLEU SCH			1	2																	1	2	5	2
93 BRAC STA											2	2	1	2					2	2				
94 PTIL CRI	1	2																			1	2		
95 AULA PAL																							2	2
96 DICR UND																							1	2
97 DREP UNC	1	2			2	2																		
98 EURH PUL																								
99 PLAG ELL	1	2	1	2																				
100 PLAG MED																					1	2		
101 POLY JUN																								
102 BRAC SPP	1	2																						
103 BRYU PSE	1	2																						
104 DICR SCO																								
105 PLAD MED																								
106 POLY STR																							1	2
107 RHIZ PSE																								
VICI AME																								
L LAYER																								
108 PELT APH																					1	2		
109 PELT MAL																							1	2
110 CLAD FUS																							1	2
111 CLAD GRA																							1	2
112 PELT CAN	1	2																						

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MW 1 POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS TABLE 1

		3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P093	P091	P133	P213	P214	P108	P211	P205	P08A	P198	P212	P160	P150	P098	P115	P007	P011	P015	P201
TOWNSHIP & RANGE		65 4	68 8	6712	6812	6813	67 9	66 9	67 5	68 7	68 1	6913	67 2	6610	67 8	68 7	86 6	67 7	68 6	68 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	WW 6
MAPSHEET		83L 10	83L 14	83L 13	83L 13	83L 13	83L 14	83L 14	83L 15	83L 15	83L 16	83L 13	83L 16	83L 12	83L 14	83L 14	83L 15	83L 15	83L 15	83L 15
PHYSIOGRAPHIC SUBREGION																				
GEOMORPHIC SYSTEM																				
ECOSECTION																				
ELEVATION(MASL)	765.9	775	790	820	760	820	810	820	750	750	730	810	710	820	745	765	680	805	650	695
SLOPE(%)	1.5	2	0	2	0	0	2	0	0	2	5	0	4	7	1	1	0	4	2	2
ASPECT(DEG)		356		40			220			340	190		312	181	351	155		260	10	18
ENVIRONMENT/SOILS :																				
ECOLOGICAL MOISTURE REGIME		M	M	SHG	SHG	SHG	SHG	SHG	M	M	M	SHG	M	M	M	M	M	SHG	M	M
NUTRIENT REGIME		M	M	M	PM	M	M	SM	M	M	M	PM	PM	M	SM	M	M	M	M	M
OVERLYING MATERIAL		GFu	Ev	GL1	Mu	Mu	Mv		GF	GL1	LTu	Mu	GLu	Fv	GLv		GLb	GL1	Mv1	Lv
UNDERLYING MATERIAL			M1		LT		Rm	Mu	GL1					GL	R1	Mr	M1		GL	GF
EROSION/DEPOSITION									GL	GL								GL		
SOIL SUBGROUP		E	E	GLSZ	GLSZ	GL	GL	GLSZ	SZ	SZ	GLSZ	GL	O	O	O	O	O	SZ	O	O
SOIL GREAT GROUP		EB	DYB	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL	GL
SOIL DRAINAGE		MW	MW	MW	MW	MW	MW	MW	MW	W	MW	MW	W	MW	MW	MW	MW	MW	MW	W
SOLUM THICKNESS(CM)	35.7	48	35	34	35	37	29	46	38	28	51	40	30	25	28	31	47	24	20	38
TYPE & DEPTH TO RESTRICT(CM)							B 90	B100												
THICKNESS LFH(CM)	5.6	5	6	3	5	4	4	5	8	5	5	7	4	4	3	4	4	8	6	5
pH-LFH	0.0																			
-A	5.7	5.0	5.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	8.0	7.0	5.0	7.0	5.0	5.0	5.0	5.0	5.0	6.0
-B	6.1	6.0	5.0	7.0	6.0	6.0	5.0	6.0	5.0	6.0	7.0	8.0	5.0	7.0	5.0	4.0	6.0	6.0	6.0	7.0
-C	7.1	6.0	4.0	8.0	8.0	8.0	6.0	8.0	8.0		6.0	8.0	4.0	8.0	8.0	5.0		7.0	7.0	8.0
TEXTURE-A/1		Si	Si	SiL	SiL	SiL	Si	SiL	Si	SiL	Si	SL	SL	SiCL	SiCL	SiL	L	SiL	SiL	Si
-B/2		SiL	SiL	C	SiC	SiCL	CL	SiCL	SiCL	CL	CL	CL	SiC	SiCL	SiCL	CL	SiCL	SiCL	SiCL	SiC
-C/3		C	SL	C	CL	CL	SiC	CL	C		C	CL	C	CL	SiCL	SCL		SiCL	SiCL	Si
COARSE FRAGMENTS-B(%)	30.0				30	25						30								
SEEPAGE(*) & MOTTLING(CM)				19	14	11	8	1		8		0		*		19	16	9	20	
ROOTING DEPTH(CM)	0.0																			
VEGETATION :																				
ASSOCIATION																				
STAND AGE(YR)	61.7								42				55	27					65	80
CANOPY HEIGHT(M)	19.9	23	19	21	22	21	20	20	19	22	18	13	19	20	20	19	20	25	22	26
MEAN ANNUAL INCREMENT	0.0																			
STRATA COVERAGE(%)-A	55.8	65	45	65	60	50	50	35	55	65	60	80	35	50	40		55	50	40	65
-B	43.2	40	50	15	25	55	15	15	62	70	55	40	50	30	70	20	40	60	45	60
-C	37.4	40	60	50	15	15	40	15	40	50	25	30	30	35	20	45	25	60	40	25
-G	4.1	3	1	20	10	1	5	1	1	1	0	1	2	4	1	20	5	5	1	4
-D	4.8	1	0	1	2	35	15	5	2	1	0	2	5	1	2	1	1	1	2	0
-L	0.2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0
SURFACE SUBST(%)-DEAD WOOD	2.7	0	1	1	1	1	2	5	2	2	5	1	2	5	1	1	5	1	1	1
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	93.6	0	99	99	99	99	98	95	98	98	95	99	98	95	99	99	95	99	99	99
-OPEN WATER	0.0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0																			
-GRAMINOIDS	0.0																			
-BROWSE	0.0																			

ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MW 1 POPULUS TREMULOIDES/VIBURNUM EDULE/RUBUS PUBESCENS TABLE 1

	3G	3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	P129	P203	P206	P166	P199	P208	P210	P009
TOWNSHIP & RANGE	6812	67 5	67 5	69 2	67 1	6912	66 9	68 8
MERIDIAN	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET	83L 13	83L 15	83L 15	83L 16	83L 16	83L 13	83L 11	83L 15
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	825	720	810	665	790	775	815	774
SLOPE(%)	1	1	3	0	0	2	0	0
ASPECT(DEG)	175	16	312			6		
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME	SM	SHG	M	M	M	M	SHG	M
NUTRIENT REGIME	SM	M	PM	M	M	M	SM	SM
OVERLYING MATERIAL	Ev	GL1	GLv	Ev	Mm	Mb		GLbL
UNDERLYING MATERIAL	Mu		Mu	GL		Ru		
EROSION/DEPOSITION								
SOIL SUBGROUP	BR	O	O	BR	O	O	GLSZ	GLSZ
SOIL GREAT GROUP	GL	GL	GL	GL	GL	GL	GL	GL
SOIL DRAINAGE	W	MW	MW	MW	W	MW	MW	MW
SOLUM THICKNESS(CM)	36	35	41	35	29	44	42	37
TYPE & DEPTH TO RESTRICT(CM)						B100		
THICKNESS LFH(CM)	9	7		10	10	7	4	4
pH-LFH								
-A	6.0	5.0	5.0	7.0	6.0	5.0	6.0	5.0
-B	7.0	6.0	8.0	6.0	6.0	6.0	7.0	5.0
-C	8.0	8.0	8.0	7.0	5.0	8.0	8.0	8.0
TEXTURE-A/1	S	SI	SiL	LS	SL	SiL	SiL	SiL
-B/2	CL	C	SiCL	SiC	SCL	SiCL	SiCL	SiCL
-C/3	S	C	SiC	C	SCL	SiC	C	SiC
COARSE FRAGMENTS-B(%)					40	25		
SEEPAGE(*) & MOTTLING(CM)				23			5	
ROOTING DEPTH(CM)								
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)						101		
CANOPY HEIGHT(M)	23	17	17	18	20	20	17	16
MEAN ANNUAL INCREMENT								
STRATA COVERAGE(%)-A	55	65	55	90	60	75	45	40
-B	30	60	35	40	35	75	15	60
-C	50	45	35	99	15	30	25	50
-G	5	1	0	10	1	2	1	5
-D	1	3	2	0	0	2	30	15
-L	0	0	0	0	0	0	1	1
SURFACE SUBST(%)-DEAD WOOD	1	5	2	3	5	10	3	5
-BEDROCK	0	0	0	0	0	0	0	0
-STONES	0	0	0	0	0	0	0	0
-MIN.SOIL	0	0	0	0	0	0	0	0
-ORGANIC	99	95	98	97	95	90	97	95
-OPEN WATER	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS								
-GRAMINOIDS								
-BROWSE								

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	2	

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

POPULUS TREMULOIDES/ROSA ACICULARIS/LATHYRUS OCHROLEUCUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 2 PAGE 1

	AVERAGE		3G		3G		3G		3G		3G		3G	
PLOT NUMBER	VALUE		P175		P102		P056		P057		P167		P079	
NUMBER OF SPECIES PER PLOT	27.7		23		30		27		28		27		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 POPU TRE	100.0	37.5	15	2	30	2	60	2	60	2	40	2	20	2
2 PICE GLA	50.0	2.8			10	2					2	2	5	2
3 PINU CON	33.3	2.5	5	2	10	2								
4 BETU PAP	16.7	1.7			10	2								
A2 LAYER														
POPU TRE	100.0	3.5	2	2	1	1	2	2	1	2	10	2	5	2
PICE GLA	66.7	1.0	3	2	1	2	1	2					1	2
PINU CON	33.3	0.3			1	2							1	2
5 SALI SPP	16.7	0.2					1	2						
B1 LAYER														
PICE GLA	50.0	0.7	2	2	1	2	1	2						
SALI SPP	16.7	0.8									5	2		
6 ALNU CRI	16.7	0.2							1	2				
7 POPU BAL	16.7	0.2											1	2
8 SALI SCO	16.7	0.2					1	2						
B2 LAYER														
9 ROSA ACI	100.0	7.2	3	2	8	2	13	2	3	2	15	2	1	2
10 SPIR BET	83.3	7.5	6	2	10	2	13	2	13	2			3	2
11 VIBU EDU	66.7	5.5	6	2	20	2	2	2	5	2				
12 AMEL ALN	66.7	1.2			1	2			2	2	3	2	1	2
13 SHEP CAN	50.0	7.8					10	2	5	2			32	2
14 VACC MYR	50.0	0.8					3	2			1	2	1	2
POPU TRE	50.0	0.7			1	2					1	2	2	2
15 LONI INV	33.3	2.3					8	2	6	2				
ALNU CRI	33.3	0.5	1	2					2	2				
PICE GLA	33.3	0.3			1	2							1	2
16 ALNU TEN	16.7	0.8									5	2		
SALI SPP	16.7	0.3									2	2		
17 ABIE LAS	16.7	0.2	1	2										
18 CORN STO	16.7	0.2							1	2				
POPU BAL	16.7	0.2											1	2
19 RUBU IDA	16.7	0.2									1	2		
20 SALI GLA	16.7	0.2											1	2
21 SYMP ALB	16.7	0.2											1	2
C LAYER														
22 LATH OCH	100.0	2.5	1	2	1	2	6	2	4	2	2	2	1	2
23 MAIA CAN	100.0	1.5	1	2	1	2	4	2	1	2	1	2	1	2
24 EPIL ANG	83.3	7.8	20	2	8	2	4	2	7	2	8	2		
25 CORN CAN	83.3	6.8	4	2	3	2	4	2	29	2	1	2		
26 LINN BOR	83.3	3.7	2	2	2	2	7	2	10	2			1	2
27 ASTE CON	83.3	2.3			3	2	1	2	2	2	3	2	5	2
28 PYRO ASA	83.3	2.3	2	2	2	2	8	2	1	2	1	2		
29 ARAL NUD	83.3	2.2	3	2	5	2	2	2	1	2	2	2		
30 ORTH SEC	83.3	0.8	1	2	1	2	1	2	1	2	1	2		
31 FRAG VIR	66.7	0.7					1	2	1	2	1	2	1	2
32 GALI BOR	66.7	0.7			1	2	1	2			1	2	1	2
33 RUBU PUB	50.0	1.0			1	2	1	2			2	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	2	

POPULUS TREMULOIDES/ROSA ACICULARIS/LATHYRUS OCHROLEUCUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 2 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P175		3G P102		3G P056		3G P057		3G P167		3G P079	
NUMBER OF SPECIES PER PLOT	27.7		23		30		27		28		27		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
34 VACC CAE	33.3	3.3	15	2									5	2
35 VICI AME	33.3	0.5							1	2	2	2		
36 EQUI PRA	33.3	0.3					1	2			1	2		
37 EQUI SYL	33.3	0.3							1	2	1	2		
38 MERT PAN	33.3	0.3			1	2			1	2				
39 SMIL RAC	33.3	0.3			1	2			1	2				
40 ARCT UVA	16.7	3.0											18	2
41 CAST MIN	16.7	0.7											4	2
42 LILI PHI	16.7	0.2											1	2
43 MELA UNE	16.7	0.2											1	2
44 PETA PAL	16.7	0.2			1	2								
45 THAL VEN	16.7	0.2			1	2								
G LAYER														
46 ELYM INN	83.3	4.7	9	2	1	2	3	2			14	2	1	2
47 CALA STR	50.0	0.7							1	2	2	2	1	2
D LAYER														
48 BRAC SAL	50.0	0.5	1	2			1	2	1	2				
49 HYLO SPL	16.7	0.2							1	2				
50 POLY JUN	16.7	0.2	1	2										
51 PTIL CRI	16.7	0.2	1	2										
L LAYER														
52 CLAD GRA	16.7	0.2											1	2
53 CLAD MIT	16.7	0.2											1	2

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : MW 2 POPULUS TREMULOIDES/ROSA ACICULARIS/LATHYRUS OCHROLEUCUS

		3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P175	P102	P056	P057	P167	P079
TOWNSHIP & RANGE		6611	6811	68 9	68 9	69 2	6910
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 12	83L 13	83L 14	83L 14	83L 16	83L 14
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	781.7	970	765	765	810	660	720
SLOPE(%)	3.2	0	0	9	10	0	0
ASPECT(DEG)				187	326		
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		SX	SM	SM	M	SX	SX
NUTRIENT REGIME		SM	M	SM	M	SM	SM
OVERLYING MATERIAL		GFr	Evr	Eb	Ev	Ebu	
UNDERLYING MATERIAL			GFm	GLru	Mb		GF1
EROSION/DEPOSITION							
SOIL SUBGROUP		O	BR	E	BR	E	PZ
SOIL GREAT GROUP		EB	GL	EB	GL	EB	GL
SOIL DRAINAGE		R	W	W	W	W	R
SOLUM THICKNESS(CM)	46.5	55	54	47	55	32	36
TYPE & DEPTH TO RESTRICT(CM)							
THICKNESS LFH(CM)	5.7	4	10	6	5	4	5
pH-LFH	0.0						
-A	6.3	6.0	8.0	5.0	8.0	6.0	5.0
-B	6.7	7.0	8.0	6.0	6.0	7.0	6.0
-C	7.6	7.0	8.0	8.0		7.0	8.0
TEXTURE-A/1		S	SiL	S	Si	S	LS
-B/2		S	SiCL	S	SCL	S	SL
-C/3		S	S	SCL	SiCL	S	LS
COARSE FRAGMENTS-B(%)	42.5				30		55
SEEPAGE(*) & MOTTLING(CM)							
ROOTING DEPTH(CM)	0.0						
VEGETATION :							
ASSOCIATION							
STAND AGE(YR)	62.0		70				54
CANOPY HEIGHT(M)	19.8	26	25	14	21	17	16
MEAN ANNUAL INCREMENT	0.0						
STRATA COVERAGE(%)-A	48.0	25	60	63	60	50	30
-B	32.8	15	40	47	35	25	35
-C	40.8	50	35	35	60	15	50
-G	5.5	10	1	3	1	15	3
-D	0.7	2	0	1	1	0	0
-L	0.0	0	0	0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	1.5	1	2	2	1	2	1
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.2	0	0	0	0	0	1
-ORGANIC	98.3	99	98	98	99	98	98
-OPEN WATER	0.0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	3	

POPULUS TREMULOIDES/LONICERA INVOLUCRATA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 3 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P207		3G P016		3G P099		3G P103		3G P070		3G P171		3G P189		3G P200		3G P008		3G P164		3G P036		3G P121	
NUMBER OF SPECIES PER PLOT	30.3		38		34		36		31		30		14		23		25		27		22		45		38	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																										
1 POPU TRE	83.3	23.8	45	2	50	2	40	2	5	2	5	2	10	2					10	2	60	2	20	2	40	2
2 POPU BAL	83.3	23.0	10	2			20	2	45	2	35	2	50	2	45	2	45	2	20	2			1	2	5	2
3 PICE GLA	16.7	1.3																	1	2	15	2				
4 PINU CON	8.3	0.1																							1	2
A2 LAYER																										
POPU TRE	75.0	2.2	10	2	5	2	2	2	2	2	2	2	1	2					2	2	1	2	1	2		
POPU BAL	66.7	3.1	2	2					5	2			1	2	10	2	10	2	5	2			3	2	1	2
5 ALNU TEN	25.0	0.6									5	2					1	2	1	2						
6 BETU PAP	25.0	0.6			5	2									1	2					1	2				
PICE GLA	25.0	0.4			3	2																	1	2	1	2
7 PICE MAR	8.3	0.1																							1	2
PINU CON	8.3	0.1																							1	2
8 SALI SPP	8.3	0.1									1	2														
B1 LAYER																										
ALNU TEN	50.0	2.8					1	2	10	2	5	2			2	2	10	2	5	2						
9 ALNU CRI	25.0	1.1					7	2	1	2									5	2						
POPU TRE	25.0	0.3							1	2											1	2	1	2		
POPU BAL	16.7	0.4	3	2																			2	1		
PICE GLA	16.7	0.2																					1	2	1	2
10 AMEL ALN	8.3	0.1			1	2																				
PINU CON	8.3	0.1																							1	2
SALI SPP	8.3	0.1									1	2														
B2 LAYER																										
11 VIBU EDU	100.0	10.6	20	2	4	2	13	2	10	2	7	2	3	2	10	2	5	2	20	2	5	2	15	2	15	2
12 LONI INV	91.7	14.4	5	2	1	2	15	2	8	2	12	2	40	2	25	2	55	2	1	2	1	2	10	2		
13 ROSA ACI	91.7	9.3	8	2	6	2	15	2	1	2	10	2	7	2	28	2			20	2	1	2	3	2	12	2
14 CORN STO	75.0	10.9	13	2			3	2	12	2	6	2	1	2	6	2	20	2	30	2	40	2				
15 RUBU IDA	58.3	2.4					2	2	1	2	1	2	4	2	10	2	10	2					1	2		
ALNU CRI	33.3	1.7	8	2			2	2	8	2											2	2				
16 SHEP CAN	33.3	1.2	3	2			8	2															2	2	1	2
AMEL ALN	33.3	0.8	3	2	2	2													3	2			1	2		
17 RIBE OXY	33.3	0.8	1	2													3	2	5	2			1	2		
18 SPIR BET	33.3	0.7	5	2	1	2					1	2													1	2
19 SYMP ALB	33.3	0.7			1	2					1	2	1	2	5	2										
PICE GLA	25.0	0.5			3	2	2	2	1	2																
POPU BAL	25.0	0.3	1	2			1	2															1	2		
ALNU TEN	16.7	0.3							3	2							1	2								
20 SALI BEB	16.7	0.3			1	2																	2	2		
21 LONI DIO	8.3	0.1																					1	2		
POPU TRE	8.3	0.1																							1	2
22 SALI LUC	8.3	0.1					1	2																		
C LAYER																										
23 RUBU PUB	91.7	1.9	2	2	5	2	2	2	1	2	1	2			1	2	3	2	3	2	2	2	1	2	2	2
24 ARAL NUD	75.0	6.8	5	2	11	2	2	2			14	2	1	2	4	2			1	2	25	2	18	2		
25 CORN CAN	75.0	4.7	3	2	4	2	29	2	1	2	1	2					1	2			10	2	4	2	3	2
26 MERT PAN	66.7	2.9	4	2			7	2	11	2	1	2					2	2	1	2			8	2	1	2
27 GALI BOR	66.7	0.8	2	2	1	2	1	2			1	2			1	2	2	2	1	2					1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	3	

POPULUS TREMULOIDES/LONICERA INVOLUCRATA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 3 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P207		3G P016		3G P099		3G P103		3G P070		3G P171		3G P189		3G P200		3G P008		3G P164		3G P036		3G P121	
NUMBER OF SPECIES PER PLOT	30.3		38		34		36		31		30		14		23		25		27		22		45		38	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
28 EPIL ANG	58.3	3.3	5	2	1	2	11	2			4	2							1	2	15	2			3	2
29 ASTE CON	58.3	1.4	1	2	4	2			5	2	3	2			1	2			2	2					1	2
30 LATH OCH	58.3	1.4	3	2			2	2	1	2	1	2					1	2					1	2	8	2
31 PYRO ASA	58.3	1.3	2	2	2	2	5	2			1	2							1	2			1	2	3	2
32 FRAG VIR	58.3	0.9	2	2	1	2	3	2	1	2							2	2					1	2	1	2
33 MAIA CAN	58.3	0.8	1	2	1	2	2	2			3	2			1	2							1	2	1	2
34 PETA PAL	58.3	0.8	1	2	1	2	2	2	1	2	1	2											2	2	2	2
35 GALI TRI	58.3	0.7							2	2	1	2			1	2	1	2	1	2	1	2	1	2		
36 SMIL RAC	50.0	0.9			1	2							1	2	1	2	1	2			5	2	2	2		
37 LINN BOR	41.7	1.6	6	2	6	2	2	2															2	2	3	2
38 MITE NUD	41.7	0.7							3	2			1	2	2	2			1	2			1	2		
39 VIOL REN	41.7	0.4			1	2			1	2							1	2					1	2	1	2
40 EQUI PRA	33.3	0.5													1	2	3	2			1	2	1	2		
41 VIOL CAN	33.3	0.5									1	2			2	2			1	2	2	2				
42 EQUI SYL	33.3	0.3									1	2	1	2							1	2	1	2		
43 VICI AME	33.3	0.3	1	2			1	2									1	2							1	2
44 OSMO DEP	25.0	0.5					3	2	1	2													2	2		
45 VALE DIO	25.0	0.5	4	2											1	2	1	2								
46 ASTE CIL	25.0	0.3			1	2	2	2																	1	2
47 EQUI ARV	25.0	0.3							1	2									1	2					1	2
48 ORTH SEC	25.0	0.3			1	2																	1	2	1	2
49 GYMN DRY	16.7	0.3															1	2			2	2				
50 ACTA RUB	16.7	0.2	1	2																			1	2		
51 ARNI COR	16.7	0.2					1	2																	1	2
52 RIBE TRI	8.3	0.2																			2	2				
53 ACHI MIL	8.3	0.1							1	2																
54 ASTE SUB	8.3	0.1															1	2								
55 ASTR AME	8.3	0.1																					1	2		
56 CALA STR	8.3	0.1					1	2																		
57 CAST MIN	8.3	0.1																					1	2		
58 DISP TRA	8.3	0.1	1	2																						
59 EQUI SCI	8.3	0.1							1	2																
60 MOEH LAT	8.3	0.1																	1	2						
61 SPIR ROM	8.3	0.1																					1	2		
62 VACC CAE	8.3	0.1	1	2																						
G LAYER																										
CALA STR	66.7	1.1	1	2			1	2	1	2	1	2			2	2	1	2	1	2	5	2				
63 ELYM INN	25.0	0.8			2	2			1	2															7	2
64 CALA SPP	8.3	0.2																					2	2		
D LAYER																										
65 PLAG DRU	25.0	0.3	1	2			1	2															1	2		
66 PLEU SCH	16.7	0.5			5	2																			1	2
67 EURH PUL	16.7	0.3					2	2																	1	2
68 PTIL CRI	16.7	0.3			2	2																			1	2
69 DREP UNC	16.7	0.2	1	2											1	2										
70 HYLO SPL	16.7	0.2			1	2																			1	2
71 BRAC CAM	8.3	0.1																					1	2		
72 BRAC SAL	8.3	0.1									1	2														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	3	

POPULUS TREMULOIDES/LONICERA INVOLUCRATA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 3 PAGE 3

PLOT NUMBER	AVERAGE VALUE		3G P207		3G P016		3G P099		3G P103		3G P070		3G P171		3G P189		3G P200		3G P008		3G P164		3G P036		3G P121	
NUMBER OF SPECIES PER PLOT	30.3		38		34		36		31		30		14		23		25		27		22		45		38	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
73 BRAC SPP	8.3	0.1																					1	2		
74 BRAC STA	8.3	0.1	1	2																						
75 MNIU SPI	8.3	0.1																					1	2		
L LAYER																										
76 PELT CAN	25.0	0.3	1	2	1	2	1	2																		
ELYM INN	8.3	0.6																							7	2
77 PELT APH	8.3	0.3			3	2																				

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : MW 3 POPULUS TREMULOIDES/LONICERA INVOLUCRATA/RUBUS PUBESCENS

		3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P207	P016	P099	P103	P070	P171	P189	P200	P008	P164	P036	P121
TOWNSHIP & RANGE		6913	68 5	67 8	66 4	68 8	68 2	67 3	69 1	68 7	65 3	64 5	6812
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 13	83L 15	83L 14	83L 10	83L 14	83L 16	83L 16	83L 16	83L 15	83L 9	83L 10	83L 13
PHYSIOGRAPHIC SUBREGION													
GEOMORPHIC SYSTEM													
ECOSECTION													
ELEVATION(MASL)	765.4	840	640	835	800	785	680	790	690	730	775	840	780
SLOPE(%)	2.7	7	0	6	3	3	2	1	2	5	0	0	3
ASPECT(DEG)		127		348	110	325	360	298	105	346			118
ENVIRONMENT/SOILS :													
ECOLOGICAL MOISTURE REGIME		SHG	SHG	SHG	HG	SHD	SHG	SHG	SHG	SHG	SHG	SHG	SHG
NUTRIENT REGIME		PM	M	PM	PM	PM	PM	PM	PM	PM		PM	M
OVERLYING MATERIAL		GFu	GFb	Mb	Mi	GL	E	GLu	GFv	GLv	Eu	GLv	Fv
UNDERLYING MATERIAL			GLu	Ru		Mu	GL		Mu	Mu		Mi	LTI
EROSION/DEPOSITION													
SOIL SUBGROUP		GL	GLBR	O	GLBR	O	O	O	O	GL	O	O	O
SOIL GREAT GROUP		EB	GL	EB	GL	LG	LG	HG	HG	GL	GL	LG	LG
SOIL DRAINAGE		I	I	MW	I	I	I	I	I	I	MW	I	I
SOLUM THICKNESS(CM)	39.7	52	62	34	46	34	32		47	32	28	23	47
TYPE & DEPTH TO RESTRICT(CM)													
THICKNESS LFH(CM)	12.5	8	12	5	11	10	28		9	12	24	13	5
pH-LFH	0.0												
-A	7.0	6.0	8.0	8.0	8.0	8.0	7.0	8.0	5.0	7.0	7.0	6.0	6.0
-B	7.3	7.0	8.0	8.0	8.0	8.0	7.0	8.0	5.0	8.0	7.0	6.0	7.0
-C	7.6	8.0	8.0	8.0	8.0	8.0	7.0	8.0	6.0	8.0	7.0	7.0	8.0
TEXTURE-A/1		SL	Si		SiL	SiL	fS		SiL	SiCL	Si	SiCL	SiL
-B/2		LS	SiCL	CL	SC	CL	fS	SiCL	SiCL	SiCL	SiCL	CL	SiCL
-C/3		S	SiC	CL	SC	CL	CL		SiCL	SiC	SiC	SiCL	CL
COARSE FRAGMENTS-B(%)	24.0			20	5				40		20		35
SEEPAGE(*) & MOTTLING(CM)		31	22		* 11		* 0	*				* 0	5
ROOTING DEPTH(CM)	5.0					5							
VEGETATION :													
ASSOCIATION													
STAND AGE(YR)	80.0												80
CANOPY HEIGHT(M)	21.7	19	16	22	26	17	20	30	21	16	22	30	21
MEAN ANNUAL INCREMENT	0.0												
STRATA COVERAGE(%)-A	51.0	61	60	60	55	40	60	55	50	40		30	50
-B	57.5	65	20	65	55	40	60	80	95	70	60	45	35
-C	34.6	40	40	75	25	40	5	10	15	10	50	70	35
-G	5.9	1	2	1	1	1	0	2	1	1	50	1	10
-D	1.8	3	6	1	0	1	0	1	0	0	2	1	5
-L	0.5	1	4	0	0	0	0	0	0	0	0	0	1
SURFACE SUBST(%)-DEAD WOOD	3.8	5	2	2	1	0	5	1	10	2	15	1	1
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	95.8	95	98	98	99	100	95	99	90	98	80	99	99
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0												
-GRAMINOIDS	0.0												
-BROWSE	0.0												

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	4	

POPULUS TREMULOIDES/CORYLUS CORNUTA/ARALIA NUDICAULIS

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 4 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G PO19		3G PO20		3G PO24		3G P188	
NUMBER OF SPECIES PER PLOT	31.3		31		33		32		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 POPU TRE	100.0	40.0	15	2	35	2	50	2	60	2
2 POPU BAL	50.0	2.5	5	2					5	2
3 PICE GLA	50.0	1.3	2	2	3	2				
4 BETU PAP	25.0	0.3			1	2				
A2 LAYER										
POPU TRE	100.0	6.0	1	2	3	2	10	2	10	2
PICE GLA	75.0	2.8			1	2	5	2	5	2
BETU PAP	50.0	1.5	5	2	1	2				
POPU BAL	50.0	1.5	1	2					5	2
5 AMEL ALN	25.0	0.3	1	2						
B1 LAYER										
AMEL ALN	50.0	3.0	10	2	2	2				
BETU PAP	25.0	1.3	5	2						
POPU TRE	25.0	1.3			5	2				
6 PRUN VIR	25.0	0.5					2	2		
7 CORY COR	25.0	0.3			1	2				
PICE GLA	25.0	0.3					1	2		
8 SALI DIS	25.0	0.3			1	2				
9 SALI SCO	25.0	0.3			1	2				
B2 LAYER										
CORY COR	100.0	18.8	12	2	5	2	22	2	36	2
10 ROSA ACI	100.0	14.5	10	2	13	2	20	2	15	2
AMEL ALN	100.0	13.3	10	2	37	2	5	2	1	2
11 VIBU EDU	100.0	4.5	12	2	2	2	1	2	3	2
PRUN VIR	75.0	2.0	5	2	1	2	2	2		
12 SYMP ALB	75.0	1.0	1	2	1	2	2	2		
13 CORN STO	50.0	4.8	10	2	9	2				
14 RUBU IDA	50.0	1.8					1	2	6	2
15 RIBE OXY	50.0	0.5	1	2			1	2		
16 PRUN PEN	25.0	0.8			3	2				
17 LONI DIO	25.0	0.5			2	2				
18 LONI INV	25.0	0.5							2	2
19 RUBU STR	25.0	0.5	2	2						
20 RIBE SPP	25.0	0.3			1	2				
21 SALI BEB	25.0	0.3							1	2
22 SALI SPP	25.0	0.3					1	2		
C LAYER										
23 ARAL NUD	100.0	17.0	15	2	9	2	35	2	9	2
24 CORN CAN	100.0	5.0	2	2	6	2	4	2	8	2
25 RUBU PUB	100.0	3.5	2	2	2	2	8	2	2	2
26 LINN BOR	100.0	3.3	1	2	7	2	3	2	2	2
27 MAIA CAN	100.0	2.0	1	2	3	2	2	2	2	2
28 GALI BOR	100.0	1.0	1	2	1	2	1	2	1	2
29 LATH OCH	75.0	1.3			1	2	3	2	1	2
30 MERT PAN	75.0	1.3	2	2			1	2	2	2
31 PETA PAL	75.0	0.8	1	2			1	2	1	2
32 ASTE CON	50.0	1.3			1	2			4	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	4	

POPULUS TREMULOIDES/CORYLUS CORNUTA/ARALIA NUDICAULIS

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		3G P019		3G P020		3G P024		3G P188	
NUMBER OF SPECIES PER PLOT	31.3		31		33		32		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
33 VIOL CAN	50.0	1.3			3	2	2	2		
34 EQUI PRA	50.0	1.0	3	2					1	2
35 PYRO ASA	50.0	0.8					2	2	1	2
36 MITE NUD	50.0	0.5	1	2	1	2				
37 DISP TRA	25.0	0.5					2	2		
38 ACTA RUB	25.0	0.3							1	2
39 ASTE SPP	25.0	0.3					1	2		
40 CALA INE	25.0	0.3					1	2		
41 EPIL ANG	25.0	0.3							1	2
42 SMIL RAC	25.0	0.3	1	2						
43 SMIL TRI	25.0	0.3							1	2
44 THAL OCC	25.0	0.3					1	2		
45 VALE DIO	25.0	0.3	1	2						
46 VICI AME	25.0	0.3			1	2				
G LAYER										
47 ELYM INN	75.0	1.0	1	2			1	2	2	2
48 CALA STR	50.0	0.5			1	2	1	2		
49 ORYZ ASP	25.0	0.3					1	2		
D LAYER										
50 DREP UNC	25.0	0.3							1	2

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : MW 4 POPULUS TREMULOIDES/CORYLUS CORNUTA/ARALIA NUDICAULIS

RESOURCE INVENTORY
TABLE 4

		3G	3G	3G	3G
PLOT NUMBER	MEAN	PO19	PO20	PO24	P188
TOWNSHIP & RANGE		67 4	67 4	68 4	69 4
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L 15	83L 15	83L 15	83L 16
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	603.8	590	595	540	690
SLOPE(%)	2.8	6	3	0	2
ASPECT(DEG)		30	42		326
ENVIRONMENT/SOILS :					
ECOLOGICAL MOISTURE REGIME		M	M	M	SM
NUTRIENT REGIME		PM	M	M	SM
OVERLYING MATERIAL		Ft	GFtl	GFt	GFv
UNDERLYING MATERIAL					GLl
EROSION/DEPOSITION					
SOIL SUBGROUP		CU	E	O	E
SOIL GREAT GROUP		R	EB	GL	EB
SOIL DRAINAGE		W	MW	W	W
SOLUM THICKNESS(CM)	33.8	28	30	42	35
TYPE & DEPTH TO RESTRICT(CM)					
THICKNESS LFH(CM)	5.5	2	5	6	9
pH-LFH	0.0				
-A	6.0		6.0	6.0	6.0
-B	7.0		7.0	7.0	7.0
-C	7.8	8.0	7.0	8.0	8.0
TEXTURE-A/1			SiC	SiL	
-B/2			SiCL	CL	S
-C/3		SiL	SCL	SiCL	CL
COARSE FRAGMENTS-B(%)	0.0				
SEEPAGE(*) & MOTTLING(CM)					
ROOTING DEPTH(CM)	0.0				
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	39.0				39
CANOPY HEIGHT(M)	23.3	22	28	21	22
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	52.5	25	45	65	75
-B	62.5	65	70	55	60
-C	35.0	20	30	60	30
-G	1.5	1	1	2	2
-D	0.3	0	0	0	1
-L	0.0	0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	3.5	5	3	5	1
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0
-ORGANIC	96.5	95	97	95	99
-OPEN WATER	0.0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	5	

POPULUS TREMULOIDES/RUBUS PARVIFLORUS/ARALIA NUDICAULIS

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 5 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P157		3G P090		3G P146		3G P161		3G P12A	
NUMBER OF SPECIES PER PLOT	28.2		29		32		28		27		25	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 POPU TRE	100.0	26.0	40	2	20	2	35	2	15	2	20	2
2 POPU BAL	60.0	11.0					5	2	20	2	30	2
3 BETU PAP	20.0	2.0					10	2				
A2 LAYER												
POPU TRE	100.0	3.6	5	2	5	2	1	2	2	2	5	2
POPU BAL	60.0	2.2					1	2	5	2	5	2
4 SALI SPP	20.0	1.0							5	2		
BETU PAP	20.0	0.4					2	2				
B1 LAYER												
5 ALNU CRI	60.0	10.0			20	2			10	2	20	2
SALI SPP	40.0	0.6			1	2	2	2				
POPU TRE	40.0	0.4			1	2			1	2		
6 PICE GLA	20.0	1.0									5	2
B2 LAYER												
7 RUBU PAR	100.0	22.6	10	2	25	2	5	2	58	2	15	2
8 VIBU EDU	100.0	9.4	18	2	8	2	10	2	10	2	1	2
9 ROSA ACI	100.0	9.2	4	2	6	2	15	2	3	2	18	2
10 SPIR BET	100.0	4.2	10	2	3	2	5	2	1	2	2	2
ALNU CRI	60.0	2.6	3	2	6	2			4	2		
11 LONI INV	40.0	3.2	13	2					3	2		
12 AMEL ALN	40.0	0.6			2	2					1	2
13 CORN STO	20.0	0.6					3	2				
14 SALI BEB	20.0	0.6	3	2								
15 RUBU IDA	20.0	0.4			2	2						
16 RIBE LAC	20.0	0.2					1	2				
SALI SPP	20.0	0.2							1	2		
17 SYMP ALB	20.0	0.2									1	2
C LAYER												
18 ARAL NUD	100.0	13.2	8	2	18	2	5	2	15	2	20	2
19 EPIL ANG	100.0	8.8	15	2	2	2	15	2	10	2	2	2
20 ASTE CON	100.0	3.6	1	2	2	2	3	2	1	2	11	2
21 LATH OCH	100.0	1.4	3	2	1	2	1	2	1	2	1	2
22 SMIL RAC	80.0	3.8			6	2	10	2	2	2	1	2
23 CORN CAN	80.0	3.2	8	2	5	2	2	2			1	2
24 RUBU PUB	80.0	1.8	2	2	5	2			1	2	1	2
25 MERT PAN	80.0	1.6	2	2	1	2	1	2	4	2		
26 MAIA CAN	80.0	1.4	2	2	1	2			1	2	3	2
27 ARNI COR	60.0	1.2	1	2	4	2			1	2		
28 LINN BOR	60.0	1.2	1	2	4	2	1	2				
29 PYRO ASA	60.0	0.8	1	2	1	2	2	2				
30 GALI BOR	60.0	0.6	1	2	1	2			1	2		
31 PETA PAL	60.0	0.6	1	2			1	2	1	2		
32 MITE NUD	40.0	0.8	3	2			1	2				
33 DISP TRA	40.0	0.6	1	2							2	2
34 EQUI SYL	40.0	0.4	1	2	1	2						
35 FRAG VIR	40.0	0.4	1	2	1	2						
36 THAL OCC	20.0	1.2									6	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	5	

POPULUS TREMULOIDES/RUBUS PARVIFLORUS/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G P157		3G P090		3G P146		3G P161		3G P12A	
NUMBER OF SPECIES PER PLOT	28.2		29		32		28		27		25	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
37 GYMN DRY	20.0	1.0	5	2								
38 ORTH SEC	20.0	0.4					2	2				
39 VIOL CAN	20.0	0.4							2	2		
40 ACTA RUB	20.0	0.2					1	2				
41 GALI TRI	20.0	0.2			1	2						
42 HIER ODO	20.0	0.2					1	2				
43 VICI AME	20.0	0.2									1	2
G LAYER												
44 CALA STR	80.0	1.6	1	2	1	2	5	2	1	2		
45 CALA SPP	20.0	0.2									1	2
46 ORYZ ASP	20.0	0.2									1	2
D LAYER												
47 BRAC SAL	40.0	0.6	2	2	1	2						
48 HYLO SPL	20.0	0.2			1	2						
49 PTIL CRI	20.0	0.2			1	2						

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MW 5 POPULUS TREMULOIDES/RUBUS PARVIFLORUS/ARALIA NUDICAULIS TABLE 5

		3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P157	P090	P146	P161	P12A
TOWNSHIP & RANGE		6611	68 8	67 2	65 2	67 7
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 12	83L 14	83L 16	83L 9	83L 15
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	831.0	900	765	825	870	795
SLOPE(%)	9.8	2	10	6	16	15
ASPECT(DEG)		320	128	196	142	202
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		SHG	M	M	SHG	M
NUTRIENT REGIME		M	PM	M	PM	M
OVERLYING MATERIAL		GFv	Ev	GFv	Mb	GL
UNDERLYING MATERIAL		MI	GLI	Mu	RI	
EROSION/DEPOSITION						
SOIL SUBGROUP		E	BR	BR	BR	E
SOIL GREAT GROUP		EB	GL	GL	GL	EB
SOIL DRAINAGE		MW	W	MW	MW	W
SOLUM THICKNESS(CM)	39.0	38	37	42	39	
TYPE & DEPTH TO RESTRICT(CM)						
THICKNESS LFH(CM)	7.0	5	8	5	10	
pH-LFH	0.0					
-A	6.2	5.0	6.0	7.0	6.0	7.0
-B	6.4	6.0	6.0	6.0	7.0	7.0
-C	6.6	7.0	5.0	6.0	8.0	7.0
TEXTURE-A/1		LS	SiL	SI	SL	SL
-B/2		LS	SiCL	SCL	SiC	SL
-C/3		SiL	SiCL	SCL	SiC	S
COARSE FRAGMENTS-B(%)	20.0			15	25	
SEEPAGE(*) & MOTTLING(CM)						
ROOTING DEPTH(CM)	0.0					
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	80.0			80		
CANOPY HEIGHT(M)	19.4	20	22	20	18	17
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	43.0	40	25	55	35	60
-B	67.0	60	80	40	80	75
-C	49.0	45	60	40	30	70
-G	1.6	1	1	5	0	1
-D	1.0	2	3	0	0	0
-L	0.0	0	0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	2.4	2	5	2	1	2
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	97.6	98	95	98	99	98
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	6	

PINUS CONTORTA/VACCINIUM MYRTILLOIDES/CLADONIA SPP

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 6 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P165		3G P101		3G P130		3G P197		3G P017		GP 4106	
NUMBER OF SPECIES PER PLOT	24.3		25		22		22		22		29		26	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 PINU CON	83.3	24.2			10	2	35	2	35	2	25	2	40	3
2 POPU TRE	33.3	0.3					1	2			1	2		
3 PINU BAN	16.7	2.5	15	2										
4 PICE GLA	16.7	0.2									1	2		
A2 LAYER														
PINU CON	50.0	2.0					2	2	5	2	5	2		
PICE GLA	33.3	1.7	5	2	5	2								
POPU TRE	33.3	0.3					1	2			1	2		
PINU BAN	16.7	0.8	5	2										
E LAYER														
5 BRYO FUS	16.7	0.1											.5	3
6 CETR HAL	16.7	0.1											.5	3
7 CETR PIN	16.7	0.1											.5	3
8 HYPO PHY	16.7	0.1											.5	3
9 PARM AMB	16.7	0.1											.5	3
10 USNE ALP	16.7	0.1											.5	3
11 USNE SCA	16.7	0.1											.5	3
12 USNE SOR	16.7	0.1											.5	3
B1 LAYER														
PICE GLA	33.3	0.7			1	2					3	2		
PINU CON	33.3	0.5			1	2			2	2				
POPU TRE	16.7	0.3					2	2						
13 SALI SCO	16.7	0.3							2	2				
B2 LAYER														
14 VACC MYR	83.3	7.3	5	2	17	2			1	2	1	2	20	3
15 ROSA ACI	83.3	2.7	4	2	1	1			4	2	2	2	5	3
POPU TRE	66.7	1.2	2	2			3	2	1	2	1	2		
16 SPIR BET	50.0	5.5	6	2	12	1							15	3
17 SHEP CAN	50.0	2.5	6	2	1	2					8	2		
18 AMEL ALN	50.0	0.8	2	2					1	2	2	2		
19 LARI LAR	33.3	0.3			1	2							.5	3
PICE GLA	16.7	0.3									2	2		
PINU CON	16.7	0.2			1	1								
20 SALI GLA	16.7	0.2	1	2										
SALI SCO	16.7	0.2							1	2				
21 VIBU EDU	16.7	0.2									1	2		
C LAYER														
22 VACC VIT	83.3	10.3	16	2	1	2			3	2	2	2	40	3
23 MAIA CAN	83.3	1.8	2	2	1	2	2	2	1	2	5	2		
24 ARCT UVA	66.7	7.0	16	2	2	2			4	2	20	2		
25 LINN BOR	66.7	4.0	1	2			6	2			2	2	15	3
26 CORN CAN	50.0	3.2	2	2			2	2					15	2
27 LATH OCH	33.3	0.7	2	2							2	2		
28 MELA LIN	33.3	0.7	1	2							3	2		
29 EQUI ARV	33.3	0.3	1	2									.5	2
30 GALI BOR	33.3	0.3	1	2							1	2		
31 PYRO CHL	33.3	0.3					1	2			1	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	6	

PINUS CONTORTA/VACCINIUM MYRTILLOIDES/CLADONIA SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	AVERAGE VALUE		3G P165		3G P101		3G P130		3G P197		3G P017		GP 4106	
NUMBER OF SPECIES PER PLOT	24.3		25		22		22		22		29		26	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
32 SOLI SPA	33.3	0.3			1	2			1	2				
33 GEOL LIV	16.7	0.2							1	2				
34 GOOD OBL	16.7	0.2					1	2						
35 LYCO COM	16.7	0.2	1	2										
36 ORTH SEC	16.7	0.2							1	2				
37 PYRO ASA	16.7	0.2					1	2						
G LAYER														
38 ELYM INN	66.7	1.8	6	2	1	2	3	2			1	2		
39 CALA STR	16.7	0.2	1	2										
40 CARE PAU	16.7	0.2									1	2		
D LAYER														
41 PLEU SCH	83.3	4.1	1	2			15	2	7	2	1	2	.5	3
42 PTIL CRI	50.0	0.4					1	2			1	2	.5	3
43 HYLO SPL	33.3	0.3							1	2	1	2		
44 POLY JUN	33.3	0.3			1	2			1	2				
45 DICR BRE	16.7	0.2	1	2										
46 DICR FUS	16.7	0.2					1	2						
47 DICR POL	16.7	0.2					1	2						
48 DICR SCO	16.7	0.2							1	2				
L LAYER														
49 CLAD MIT	100.0	13.9	1	2	77	2	2	2	1	2	2	2	.5	3
50 CLAD CRI	50.0	0.5					1	2	1	2	1	2		
51 PELT MAL	50.0	0.4			1	2			1	2			.5	3
52 CLAD GRA	33.3	0.5			2	2	1	2						
53 CLAD RAN	33.3	0.3			1	2							.5	3
54 PELT APH	33.3	0.3					1	2			1	2		
55 PELT CAN	16.7	0.3					2	2						
56 CLAD COC	16.7	0.2			1	2								
57 STER TOM	16.7	0.2			1	2								
58 CETR NIV	16.7	0.1											.5	3
59 CLAD CEN	16.7	0.1											.5	3
60 CLAD CON	16.7	0.1											.5	3
61 CLAD STE	16.7	0.1											.5	3

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 6

TITLE : MW 6 PINUS CONTORTA/VACCINIUM MYRTILLOIDES/CLADONIA SPP

PLOT NUMBER	MEAN	3G P165	3G P101	3G P130	3G P197	3G PO17	GP 4106
TOWNSHIP & RANGE		66 3	6810	6812	68 3	68 5	64 1
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 14	83L 13	83L 16	83L 15	83L 9
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	739.2	715	730	880	660	635	815
SLOPE(%)	1.5	0	0	2	5	2	0
ASPECT(DEG)				253	18	91	
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		SX	X	SX	X	X	X
NUTRIENT REGIME		SM	SM	O	O	SM	SM
OVERLYING MATERIAL		E	Er	Em	Er	GFb	Eh
UNDERLYING MATERIAL						GL I	
EROSION/DEPOSITION							
SOIL SUBGROUP		E	E	E	E	E	E
SOIL GREAT GROUP		EB	DYB	EB	EB	EB	DYB
SOIL DRAINAGE		R	R	R	W	R	R
SOLUM THICKNESS(CM)	54.0		39	59	67	45	60
TYPE & DEPTH TO RESTRICT(CM)							
THICKNESS LFH(CM)	3.6		2	4	2	2	8
pH-LFH	3.6						3.6
-A	4.9		4.0	5.0	6.0	6.0	3.6
-B	5.6		5.0	6.0	6.0	6.0	5.0
-C	5.8		6.0	8.0	5.0	5.0	4.9
TEXTURE-A/1			S	S	S	S	S
-B/2			S	S	S	S	S
-C/3			S	S	S	S	S
COARSE FRAGMENTS-B(%)	0.0						
SEEPAGE(*) & MOTTLING(CM)							
ROOTING DEPTH(CM)	67.0						67
VEGETATION :							
ASSOCIATION							
STAND AGE(YR)	80.3		70	80			91
CANOPY HEIGHT(M)	19.0	16	22	23	15	18	20
MEAN ANNUAL INCREMENT	3.6						3.59
STRATA COVERAGE(%)-A	32.2	25	15	40	40	33	40
-B	20.0	15	25	10	10	15	45
-C	27.2	35	3	10	10	35	70
-G	2.2	5	1	5	0	2	0
-D	13.5	2	1	20	5	3	50
-L	25.2	1	90	5	1	4	50
SURFACE SUBST(%)-DEAD WOOD	3.0	1	1	2	2	2	10
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.7	0	4	0	0	0	0
-ORGANIC	96.3	99	95	98	98	98	90
-OPEN WATER	0.0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	7	

PINUS CONTORTA/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		3G P182		3G P122		3G P131		3G P134		3G P128		3G P107		3G P183	
NUMBER OF SPECIES PER PLOT	25.3		31		23		35		17		33		23		15	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 PINU CON	100.0	30.0	30	2	30	2	20	2	35	2	40	2	20	2	35	2
2 POPU TRE	28.6	0.3			1	2					1	2				
3 PICE MAR	14.3	0.7											5	2		
4 PICE GLA	14.3	0.3					2	2								
A2 LAYER																
PINU CON	85.7	4.1	2	2			5	2	5	2	10	2	2	2	5	2
PICE MAR	57.1	5.7	5	2							10	2	15	2	10	2
5 POPU BAL	28.6	0.3					1	2			1	2				
6 ALNU TEN	14.3	0.1									1	2				
PICE GLA	14.3	0.1									1	2				
POPU TRE	14.3	0.1									1	2				
B1 LAYER																
PICE MAR	28.6	1.0	5	2									2	2		
7 SALI SPP	28.6	0.3					1	2			1	2				
8 ABIE BAL	14.3	0.4	3	2												
PICE GLA	14.3	0.4					3	2								
9 BETU PAP	14.3	0.1	1	2												
B2 LAYER																
10 VACC MYR	100.0	4.4	1	2	5	2	6	2	14	2	2	2	1	2	2	2
11 ROSA ACI	85.7	3.1	5	2	4	2	5	2	6	2	1	2			1	2
12 LEDU GRO	71.4	13.4	50	2			25	2			5	2	4	2	10	2
13 SPIR BET	57.1	1.0	2	2	2	2			1	2					2	2
POPU TRE	57.1	0.6	1	2	1	2	1	2			1	2				
14 SHEP CAN	42.9	7.1			35	2	6	2			9	2				
PICE MAR	42.9	1.4	4	2							3	2	3	2		
15 SALI BEB	42.9	0.4	1	2			1	2			1	2				
PICE GLA	28.6	0.4					1	2			2	2				
PINU CON	28.6	0.3			1	2			1	2						
16 VACC MEM	14.3	0.3											2	2		
ABIE BAL	14.3	0.1	1	2												
17 ALNU CRI	14.3	0.1									1	2				
ALNU TEN	14.3	0.1	1	2												
18 AMEL ALN	14.3	0.1			1	2										
BETU PAP	14.3	0.1	1	2												
19 LARI LAR	14.3	0.1	1	2												
20 LONI INV	14.3	0.1	1	2												
21 VIBU EDU	14.3	0.1							1	2						
C LAYER																
22 LINN BOR	100.0	2.9	1	2	3	2	3	2	4	2	6	2	2	2	1	2
23 CORN CAN	85.7	3.9	4	2	15	2	1	2			1	2	4	2	2	2
24 VACC VIT	85.7	2.9	5	2	2	2	6	2	2	2	3	2	2	2		
25 MAIA CAN	57.1	1.4	2	2	5	2	2	2	1	2						
26 GEOC LIV	42.9	0.6					1	2			2	2	1	2		
27 ARCT UVA	42.9	0.4			1	2	1	2							1	2
28 ASTE CON	28.6	0.9			2	2	4	2								
29 EPIL ANG	28.6	0.6			2	2	2	2								
30 PETA PAL	28.6	0.4					2	2					1	2		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	7	

PINUS CONTORTA/PLEUROZIUM SCHREBERI

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 7 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P182		3G P122		3G P131		3G P134		3G P128		3G P107		3G P183	
NUMBER OF SPECIES PER PLOT	25.3		31		23		35		17		33		23		15	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
31 ORTH SEC	28.6	0.3					1	2			1	2				
32 VACC CAE	28.6	0.3					1	2			1	2				
33 OXYC MIC	14.3	0.4	3	2												
34 ARAL NUD	14.3	0.1							1	2						
35 ARNI COR	14.3	0.1					1	2								
36 EQUI PRA	14.3	0.1									1	2				
37 LATH OCH	14.3	0.1					1	2								
38 LYCO ANN	14.3	0.1	1	2												
39 LYCO COM	14.3	0.1	1	2												
40 MELA LIN	14.3	0.1					1	2								
41 PYRO ASA	14.3	0.1			1	2										
G LAYER																
42 ELYM INN	85.7	1.6	2	2	2	2	2	2	3	2	1	2			1	2
43 BARB LYC	14.3	0.1					1	2								
44 CALA STR	14.3	0.1											1	2		
D LAYER																
45 PLEU SCH	100.0	62.4	70	2	55	2	32	2	95	2	52	2	53	2	80	2
46 HYLO SPL	100.0	7.1	4	2	2	2	11	2	1	2	24	2	3	2	5	2
47 PTIL CRI	71.4	6.3	3	2	1	2			1	2	6	2	33	2		
48 DICR POL	57.1	1.3			1	2	3	2			4	2	1	2		
49 BRAC STA	28.6	0.3			1	2	1	2								
50 POLY JUN	14.3	0.1									1	2				
L LAYER																
51 PELT APH	85.7	2.0	1	2			2	2	4	2	3	2	2	2	2	2
52 CLAD MIT	71.4	1.0	1	2			1	2			1	2	2	2	2	2
53 CLAD GRA	14.3	0.1											1	2		
54 CLAD RAN	14.3	0.1											1	2		
55 PELT MAL	14.3	0.1							1	2						

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MW 7 PINUS CONTORTA/PLEUROZIUM SCHREBERI TABLE 7

		3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P182	P122	P131	P134	P128	P107	P183
TOWNSHIP & RANGE		65 3	6812	6711	6712	6812	66 8	65 2
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 13	83L 13	83L 13	83L 13	83L 11	83L 9
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	820.0	810	805	810	830	810	845	830
SLOPE(%)	0.0	0	0	0	0	0	0	0
ASPECT(DEG)								
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		SX	SX	SM	SX	SX	SX	SM
NUTRIENT REGIME		SM	SM	M	SM	M	SM	SM
OVERLYING MATERIAL		Ev	GFu	Fv	GFr	GFt	GFr	GFvr
UNDERLYING MATERIAL		L1		GFu				R
EROSION/DEPOSITION								
SOIL SUBGROUP		PZ	E	BR	E	BR	E	BR
SOIL GREAT GROUP		GL	EB	GL	EB	GL	EB	GL
SOIL DRAINAGE		W	W	W	R	W	W	W
SOLUM THICKNESS(CM)	46.3	106	18	22	37	63	40	38
TYPE & DEPTH TO RESTRICT(CM)								
THICKNESS LFH(CM)	6.7	7	9	5	8	8	5	5
pH-LFH	0.0							
-A	5.3	5.0	6.0	6.0	5.0	6.0	5.0	4.0
-B	6.1	6.0	6.0	7.0	6.0	7.0	5.0	6.0
-C	7.3	8.0		8.0	8.0	6.0	6.0	8.0
TEXTURE-A/1		S	S	S	S	Si	SiL	S
-B/2		SiC	S	SCL	S	SiCL	S	SC
-C/3		SiC		SiL	S	S	LS	SC
COARSE FRAGMENTS-B(%)	37.5		60					15
SEEPAGE(*) & MOTTLING(CM)						44		
ROOTING DEPTH(CM)	0.0							
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)	77.8	67	75			85	85	77
CANOPY HEIGHT(M)	17.9	23	14	16	22	19	16	15
MEAN ANNUAL INCREMENT	0.0							
STRATA COVERAGE(%)-A	38.6	35	30	25	40	50	40	50
-B	33.3	70	50	43	25	20	10	15
-C	15.7	15	30	25	10	15	10	5
-G	2.1	2	2	5	3	1	1	1
-D	78.4	75	60	50	99	85	95	85
-L	2.6	2	0	2	5	0	5	4
SURFACE SUBST(%)-DEAD WOOD	2.3	1	3	1	5	2	3	1
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.1	0	0	0	0	1	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0
-ORGANIC	97.6	99	97	99	95	97	97	99
-OPEN WATER	0.0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0							
-GRAMINOIDS	0.0							
-BROWSE	0.0							

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	8	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 8 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P059		3G P120		3G P147	
NUMBER OF SPECIES PER PLOT	32.3		34		32		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
A1 LAYER								
1 PINU CON	100.0	35.0	45	2	40	2	20	2
2 PICE GLA	66.7	4.0	2	2			10	2
3 POPU TRE	66.7	2.3	5	2	2	2		
A2 LAYER								
PINU CON	100.0	3.7	1	2	5	2	5	2
PICE GLA	66.7	2.7	3	2			5	2
4 BETU PAP	66.7	1.3	2	2			2	2
POPU TRE	33.3	0.3	1	2				
5 SALI SCO	33.3	0.3	1	2				
B1 LAYER								
6 ALNU CRI	66.7	2.0			1	2	5	2
7 SALI GLA	33.3	0.7			2	2		
8 BETU OCC	33.3	0.3			1	2		
BETU PAP	33.3	0.3					1	2
9 SALI SPP	33.3	0.3	1	2				
B2 LAYER								
10 VIBU EDU	100.0	4.7	5	2	8	2	1	2
11 ROSA ACI	100.0	4.0	3	2	5	2	4	2
12 SPIR BET	100.0	4.0	5	2	6	2	1	2
PICE GLA	100.0	1.7	1	1	1	2	3	2
BETU PAP	66.7	1.3	1	1			3	2
13 ABIE LAS	66.7	1.0	1	2			2	2
14 RUBU IDA	66.7	1.0			2	2	1	2
15 AMEL ALN	33.3	4.7					14	2
ALNU CRI	33.3	1.0					3	2
16 LONI INV	33.3	1.0	3	2				
BETU OCC	33.3	0.7			2	2		
POPU TRE	33.3	0.3			1	2		
17 RIBE LAC	33.3	0.3			1	2		
C LAYER								
18 ARAL NUD	100.0	14.3	4	2	21	2	18	2
19 CORN CAN	100.0	6.3	5	2	10	2	4	2
20 LINN BOR	100.0	3.0	2	2	6	2	1	2
21 MAIA CAN	100.0	1.3	2	2	1	2	1	2
22 PYRO ASA	100.0	1.3	1	2	2	2	1	2
23 GALI TRI	100.0	1.0	1	2	1	2	1	2
24 VIOL REN	100.0	1.0	1	2	1	2	1	2
25 ASTE CON	66.7	2.3	4	2	3	2		
26 LYCO ANN	66.7	1.3			3	2	1	2
27 SMIL RAC	66.7	1.0			1	2	2	2
28 LATH OCH	66.7	0.7	1	2	1	2		
29 RUBU PUB	66.7	0.7			1	2	1	2
30 ARNI COR	33.3	0.7	2	2				
31 GYMN DRY	33.3	0.7					2	2
32 DISP TRA	33.3	0.3	1	2				
33 EPIL ANG	33.3	0.3			1	2		
34 MITE NUD	33.3	0.3			1	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	8	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 8 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P059		3G P120		3G P147	
NUMBER OF SPECIES PER PLOT	32.3		34		32		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
35 ORTH SEC	33.3	0.3	1	2				
36 PETA PAL	33.3	0.3	1	2				
G LAYER								
37 CALA CAN	33.3	0.3			1	2		
D LAYER								
38 PLEU SCH	100.0	7.0	12	2	2	2	7	2
39 HYLO SPL	100.0	5.0	4	2	1	2	10	2
40 PTIL CRI	100.0	4.3	5	2	2	2	6	2
41 DICR FRA	33.3	0.7					2	2
42 DICR BRE	33.3	0.3	1	2				
L LAYER								
43 CLAD GRA	33.3	0.3	1	2				

ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY

TITLE : MW 8 PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

TABLE 8

		3G	3G	3G
PLOT NUMBER	MEAN	P059	P120	P147
TOWNSHIP & RANGE		6710	6710	65 2
MERIDIAN		W 6	W 6	W 6
MAPSHEET		83L	83L	83L
		14	14	9
PHYSIOGRAPHIC SUBREGION				
GEOMORPHIC SYSTEM				
ECOSECTION				
ELEVATION(MASL)	800.0	820	800	780
SLOPE(%)	8.7	10	4	12
ASPECT(DEG)		328	20	333
ENVIRONMENT/SOILS :				
ECOLOGICAL MOISTURE REGIME		M	SM	M
NUTRIENT REGIME		M	SM	SM
OVERLYING MATERIAL		Fvt	E1	Ev
UNDERLYING MATERIAL		P1	GFm	GF1
EROSION/DEPOSITION				
SOIL SUBGROUP		E	E	BR
SOIL GREAT GROUP		EB	EB	GL
SOIL DRAINAGE		W	W	W
SOLUM THICKNESS(CM)	55.3	47	58	61
TYPE & DEPTH TO RESTRICT(CM)			B120	
THICKNESS LFH(CM)	8.7	5	12	9
pH-LFH	0.0			
-A	5.3	5.0	5.0	6.0
-B	6.3	6.0	7.0	6.0
-C	6.7	7.0	7.0	6.0
TEXTURE-A/1		SL	S	S
-B/2		SiCL	S	SCL
-C/3		S	S	SCL
COARSE FRAGMENTS-B(%)	30.0			30
SEEPAGE(*) & MOTTLING(CM)				45
ROOTING DEPTH(CM)	0.0			
VEGETATION :				
ASSOCIATION				
STAND AGE(YR)	84.5		89	80
CANOPY HEIGHT(M)	23.0	22	20	27
MEAN ANNUAL INCREMENT	0.0			
STRATA COVERAGE(%)-A	48.3	60	45	40
-B	23.3	15	30	25
-C	35.0	20	50	35
-G	0.3	0	1	0
-D	18.3	20	5	30
-L	0.0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	7.7	10	10	3
-BEDROCK	0.0	0	0	0
-STONES	0.0	0	0	0
-MIN.SOIL	0.0	0	0	0
-ORGANIC	92.3	90	90	97
-OPEN WATER	0.0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0			
-GRAMINOIDS	0.0			
-BROWSE	0.0			

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	9	

PICEA MARIANA-PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 9 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P193		3G P110		3G P192		3G P105		3G P143		3G P162		3G P111	
NUMBER OF SPECIES PER PLOT	24.1		21		22		20		19		21		26		40	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 PINU CON	100.0	9.6	10	2	20	2	15	2	15	2	5	2	1	2	1	2
2 PICE MAR	71.4	13.0	5	2					30	2	5	2	50	2	1	2
3 BETU PAP	14.3	0.1											1	2		
4 LARI LAR	14.3	0.1													1	2
A2 LAYER																
PICE MAR	100.0	23.6	20	2	20	2	45	2	15	2	50	2	10	2	5	2
PINU CON	57.1	1.1	1	2	1	2	1	2							5	2
5 ALNU TEN	14.3	0.3											2	2		
LARI LAR	14.3	0.1													1	2
6 SALI SPP	14.3	0.1									1	2				
B1 LAYER																
PICE MAR	85.7	2.0	3	2	2	2	5	2	1	2	2	2			1	2
PINU CON	14.3	0.1													1	2
SALI SPP	14.3	0.1									1	2				
B2 LAYER																
7 LEDU GRO	85.7	7.9	40	2	1	2	10	2			1	2	1	2	2	2
8 VACC MYR	85.7	2.0	1	2	3	2			1	2	2	2	1	2	6	2
9 ROSA ACI	85.7	1.4	1	2	2	2	1	2	1	2			3	2	2	2
10 LONI INV	71.4	0.9			1	2	1	2	2	2	1	2	1	2		
PICE MAR	57.1	2.1	2	2	8	2	3	2							2	2
11 SHEP CAN	28.6	5.1					35	2							1	2
12 ABIE LAS	28.6	0.3	1	2			1	2								
13 BETU GLA	14.3	0.4													3	2
14 SPIR BET	14.3	0.4	3	2												
15 SALI OCC	14.3	0.3													2	2
16 ALNU CRI	14.3	0.1											1	2		
17 POPU TRE	14.3	0.1											1	2		
18 SALI GLA	14.3	0.1					1	2								
19 VIBU EDU	14.3	0.1											1	2		
C LAYER																
20 CORN CAN	100.0	4.7	4	2	4	2	1	2	2	2	10	2	8	2	4	2
21 LINN BOR	85.7	1.1	1	2	1	2	1	2	1	2	2	2	2	2		
22 VACC VIT	71.4	0.9	1	2	2	2	1	2	1	2	1	2				
23 VACC CAE	57.1	1.4	1	2	1	2					2	2			6	2
24 EPIL ANG	28.6	0.4			1	2					2	2				
25 GAUL HIS	28.6	0.4	2	2					1	2						
26 MITE NUD	28.6	0.4							1	2			2	2		
27 PETA PAL	28.6	0.4			1	2									2	2
28 ANTE NEG	14.3	0.4													3	2
29 LYCO CLA	14.3	0.3													2	2
30 RUBU PUB	14.3	0.3											2	2		
31 ARNI COR	14.3	0.1													1	2
32 CAST MIN	14.3	0.1													1	2
33 EQUI PRA	14.3	0.1											1	2		
34 EQUI SCI	14.3	0.1											1	2		
35 EQUI SYL	14.3	0.1													1	2
36 FRAG VIR	14.3	0.1													1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	9	

PICEA MARIANA-PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 9 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P193		3G P110		3G P192		3G P105		3G P143		3G P162		3G P111	
NUMBER OF SPECIES PER PLOT	24.1		21		22		20		19		21		26		40	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
37 HIER UMB	14.3	0.1													1	2
38 LYCO ANN	14.3	0.1									1	2				
39 MELA LIN	14.3	0.1													1	2
40 MERT PAN	14.3	0.1											1	2		
41 OXYC MIC	14.3	0.1											1	2		
42 PYRO ASA	14.3	0.1									1	2				
43 RIBE TRI	14.3	0.1											1	2		
44 SMIL TRI	14.3	0.1													1	2
45 VALE DIO	14.3	0.1											1	2		
G LAYER																
46 ELYM INN	57.1	0.6	1	2	1	2	1	2							1	2
47 CALA STR	28.6	0.3			1	2									1	2
48 CARE CAP	14.3	0.3													2	2
49 CARE DIS	14.3	0.1			1	2										
50 ORYZ EXI	14.3	0.1													1	2
D LAYER																
51 PLEU SCH	100.0	50.0	97	2	45	2	56	2	61	2	45	2	38	2	8	2
52 HYLO SPL	100.0	22.3	1	2	5	2	3	2	26	2	45	2	43	2	33	2
53 PTIL CRI	100.0	12.1	1	2	30	2	29	2	6	2	5	2	13	2	1	2
54 DICR POL	42.9	1.0							1	2	5	2	1	2		
55 AULA PAL	14.3	0.1													1	2
56 BARB LYC	14.3	0.1			1	2										
57 DICR SCO	14.3	0.1													1	2
58 SPHA NEM	14.3	0.1							1	2						
L LAYER																
59 PELT APH	57.1	1.3	1	2					1	2	5	2			2	2
60 CLAD MIT	28.6	2.9					1	2							19	2
61 CLAD GRA	14.3	0.3													2	2
62 STER TOM	14.3	0.3													2	2
63 CLAD CRI	14.3	0.1					1	2								
64 PELT MAL	14.3	0.1							1	2						

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : MW 9 PICEA MARIANA-PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM

		3G	3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P193	P110	P192	P105	P143	P162	P111
TOWNSHIP & RANGE		64 3	67 8	65 3	64 4	6611	65 3	67 8
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 14	83L 9	83L 10	83L 12	83L 9	83L 14
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	807.9	820	805	790	840	850	735	815
SLOPE(%)	1.4	5	1	0	3	0	1	0
ASPECT(DEG)		54	336		270		360	
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		SHG	SHG	SHG	SHG	SHG	SHG	M
NUTRIENT REGIME		SM	SM	SM	SM	SM	SM	
OVERLYING MATERIAL		GFi	E	Evr	GLi	GFb	Mv1	
UNDERLYING MATERIAL			GL1	GF		GL1	R	
EROSION/DEPOSITION								
SOIL SUBGROUP		BR	O	GL	GLBR	GLBR	GL	
SOIL GREAT GROUP		GL	LG	EB	GL	GL	GL	
SOIL DRAINAGE		MW	I	I	MW	MW	I	
SOLUM THICKNESS(CM)	37.4	65		30	25	48	19	
TYPE & DEPTH TO RESTRICT(CM)						W100		
THICKNESS LFH(CM)	9.6	9		8	8	5	18	
pH-LFH	0.0							
-A	5.6	4.0		6.0	5.0	5.0	8.0	
-B	6.4	5.0		7.0	5.0	7.0	8.0	
-C	7.8	7.0		8.0	8.0	8.0	8.0	
TEXTURE-A/1		S		SL	SiL	S	SL	
-B/2		SCL		Si	CL	LS	SCL	
-C/3		S		Si	CL	LS	SC	
COARSE FRAGMENTS-B(%)	22.0			19			25	
SEEPAGE(*) & MOTTLING(CM)		45			40	* 36	9	
ROOTING DEPTH(CM)	0.0							
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)	75.7	87	87	72	78		85	45
CANOPY HEIGHT(M)	18.0	22	20	22	17	19	13	13
MEAN ANNUAL INCREMENT	0.0							
STRATA COVERAGE(%)-A	46.4	35	40	60	60	60	55	15
-B	22.1	50	15	60	5	5	5	15
-C	11.0	10	5	2	5	20	15	20
-G	1.3	1	2	1	0	0	0	5
-D	86.7	99	80	95	95	99	95	44
-L	1.1	1	0	1	1	5	0	0
SURFACE SUBST(%)-DEAD WOOD	2.9	1	5	1	0	10	3	0
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0
-ORGANIC	97.1	99	95	99	100	90	97	100
-OPEN WATER	0.0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0							
-GRAMINOIDS	0.0							
-BROWSE	0.0							

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	10	

PICEA GLAUCA/LONICERA INVOLUCRATA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 10 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P187		3G P191		3G P204		3G P114		3G 202A	
NUMBER OF SPECIES PER PLOT	28.0		18		36		36		33		17	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 PICE GLA	100.0	29.0	55	2	35	2	10	2	35	2	10	2
2 POPU TRE	80.0	2.8	1	2			10	2	2	2	1	2
3 ABIE LAS	20.0	2.0			10	2						
4 BETU PAP	20.0	0.4			2	2						
5 PICE MAR	20.0	0.4									2	2
6 POPU BAL	20.0	0.4					2	2				
7 ABIE BAL	20.0	0.2					1	2				
A2 LAYER												
PICE GLA	80.0	7.2	5	2	1	2	10	2			20	2
BETU PAP	40.0	1.4	5	2			2	2				
POPU TRE	40.0	1.2					5	2	1	2		
PICE MAR	20.0	2.0									10	2
ABIE LAS	20.0	1.0			5	2						
ABIE BAL	20.0	0.2					1	2				
8 ALNU TEN	20.0	0.2							1	2		
POPU BAL	20.0	0.2					1	2				
B1 LAYER												
BETU PAP	40.0	2.0			5	2	5	2				
PICE GLA	40.0	0.6					2	2			1	2
ALNU TEN	40.0	0.4			1	2			1	2		
POPU TRE	20.0	0.4					2	2				
ABIE BAL	20.0	0.2					1	2				
PICE MAR	20.0	0.2									1	2
B2 LAYER												
9 LONI INV	100.0	4.8	3	2	8	2	10	2	2	2	1	2
10 ROSA ACI	80.0	3.8	2	2	4	2	11	2	2	2		
11 VIBU EDU	80.0	3.8	2	2	5	2	10	2	2	2		
ALNU TEN	40.0	2.6			1	2			12	2		
PICE GLA	40.0	0.8			2	2	2	2				
ABIE LAS	40.0	0.4	1	2	1	2						
BETU PAP	20.0	0.4			2	2						
12 CORN STO	20.0	0.4			2	2						
POPU TRE	20.0	0.4					2	2				
13 ALNU CRI	20.0	0.2							1	2		
POPU BAL	20.0	0.2					1	2				
14 RIBE TRI	20.0	0.2			1	2						
15 RUBU IDA	20.0	0.2			1	2						
16 SYMP ALB	20.0	0.2							1	2		
C LAYER												
17 LINN BOR	100.0	4.8	4	2	1	2	5	2	11	2	3	2
18 MITE NUD	100.0	1.2	1	2	1	2	2	2	1	2	1	2
19 CORN CAN	80.0	4.0	3	2	5	2	10	2	2	2		
20 RUBU PUB	80.0	3.6	3	2	8	2	3	2	4	2		
21 VIOL REN	80.0	0.8	1	2	1	2	1	2	1	2		
22 PETA PAL	60.0	0.6	1	2	1	2	1	2				
23 EQUI PRA	40.0	1.6			5	2					3	2
24 ASTE CIL	40.0	0.6			1	2			2	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	10	

PICEA GLAUCA/LONICERA INVOLUCRATA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 10 PAGE 2

	AVERAGE		3G		3G		3G		3G		3G	
PLOT NUMBER	VALUE		P187		P191		P204		P114		202A	
NUMBER OF SPECIES PER PLOT	28.0		18		36		36		33		17	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
25 MERT PAN	40.0	0.6			1	2			2	2		
26 EQUI SYL	40.0	0.4							1	2	1	2
27 FRAG VIR	40.0	0.4					1	2	1	2		
28 GALI BOR	40.0	0.4					1	2	1	2		
29 LATH OCH	40.0	0.4			1	2	1	2				
30 MAIA CAN	40.0	0.4			1	2	1	2				
31 ARAL NUD	20.0	3.8			19	2						
32 EPIL ANG	20.0	0.8							4	2		
33 ASTE CON	20.0	0.6							3	2		
34 PYRO ASA	20.0	0.6	3	2								
35 GALI TRI	20.0	0.2			1	2						
36 GAUL HIS	20.0	0.2									1	2
37 GYMN DRY	20.0	0.2			1	2						
38 LYCO ANN	20.0	0.2			1	2						
39 ORTH SEC	20.0	0.2							1	2		
40 RIBE LAC	20.0	0.2							1	2		
41 RUBU CHA	20.0	0.2									1	2
42 VALE DIO	20.0	0.2					1	2				
G LAYER												
43 CALA STR	40.0	0.8			1	2	3	2				
44 ELYM INN	20.0	0.2							1	2		
D LAYER												
45 PLEU SCH	100.0	20.0	10	2	32	2	9	2	4	2	45	2
46 PTIL CRI	100.0	18.0	3	2	12	2	55	2	7	2	13	2
47 HYLO SPL	100.0	11.2	19	2	9	2	7	2	8	2	13	2
48 BRAC STA	20.0	0.2					1	2				
49 DICR BRE	20.0	0.2							1	2		
50 DICR UND	20.0	0.2							1	2		
L LAYER												
51 PELT APH	40.0	1.2					4	2	2	2		
52 PELT CAN	20.0	0.4							2	2		

ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 10

TITLE : MW 10 PICEA GLAUCA/LONICERA INVOLUCRATA/RUBUS PUBESCENS

		3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P187	P191	P204	P114	202A
TOWNSHIP & RANGE		66 1	65 4	67 5	6803	68 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 9	83L 15	83L 13	83L 15
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	742.0	805	790	720	700	695
SLOPE(%)	1.6	1	5	1	0	1
ASPECT(DEG)		358	40	16		164
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		HG	SHG	SHG	SHG	SHG
NUTRIENT REGIME		M	PM	M	PM	M
OVERLYING MATERIAL		GF1		GFv	Fv	
UNDERLYING MATERIAL				GL1	Mu	
EROSION/DEPOSITION						
SOIL SUBGROUP		O	E	GL	GLBR	
SOIL GREAT GROUP		LG	EB	GL	GL	
SOIL DRAINAGE		I	I	I	I	
SOLUM THICKNESS(CM)	41.0	23	75	25		
TYPE & DEPTH TO RESTRICT(CM)						
THICKNESS LFH(CM)	10.0	10	5	15		
pH-LFH	0.0					
-A	5.0	4.0		4.0	7.0	
-B	5.7	5.0		5.0	7.0	
-C	6.3	6.0		6.0	7.0	
TEXTURE-A/1		SIL		SI	SIL	
-B/2		SICL		SIC	SICL	
-C/3		S		C	SICL	
COARSE FRAGMENTS-B(%)	0.0					
SEEPAGE(*) & MOTTLING(CM)				6	15	
ROOTING DEPTH(CM)	0.0					
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	119.7	78	137	144		
CANOPY HEIGHT(M)	26.0	20	30	32	23	25
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	45.0	60	50	35	40	40
-B	19.6	10	25	45	15	3
-C	21.4	10	45	20	25	7
-G	1.0	0	1	3	1	0
-D	47.0	30	50	70	15	70
-L	1.4	0	0	4	3	0
SURFACE SUBST(%)-DEAD WOOD	11.0	10	5	15	5	20
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	89.0	90	95	85	95	80
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	11	

PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 11 PAGE 1

	AVERAGE		3G		3G		3G		3G		3G		3G	
PLOT NUMBER	VALUE		P186		PO28		P202		PO27		P168		PO37	
NUMBER OF SPECIES PER PLOT	25.0		18		31		13		28		33		27	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 PICE MAR	100.0	25.0	15	2	30	2	5	2	60	2	20	2	20	2
2 LARI LAR	33.3	1.3	4	2							4	2		
3 PICE GLA	33.3	1.0					1	2			5	2		
4 PINU CON	16.7	0.8	5	2										
A2 LAYER														
PICE MAR	100.0	12.3	2	2	20	2	40	2	2	2	5	2	5	2
PICE GLA	16.7	0.8					5	2						
LARI LAR	16.7	0.3									2	2		
PINU CON	16.7	0.3	2	2										
B1 LAYER														
PICE MAR	33.3	1.3			3	2							5	2
B2 LAYER														
5 LEDU GRO	100.0	20.7	50	2	55	2	1	2	2	2	4	2	12	2
6 LONI INV	66.7	2.7	1	2	2	2			9	2	4	2		
7 ROSA ACI	66.7	1.2	1	2	3	2			2	2	1	2		
PICE MAR	50.0	1.0	2	2	1	2							3	2
8 SALI PLA	33.3	1.0							1	2			5	2
9 SALI MYR	33.3	0.3			1	2							1	2
10 SALI SPP	16.7	0.3							2	2				
11 VACC MYR	16.7	0.3	2	2										
12 BETU GLA	16.7	0.2			1	2								
13 BETU OCC	16.7	0.2			1	2								
14 BETU PUM	16.7	0.2											1	2
15 RIBE OXY	16.7	0.2									1	2		
C LAYER														
16 LINN BOR	100.0	1.3	2	2	2	2	1	2	1	2	1	2	1	2
17 EQUI SCI	100.0	1.0	1	2	1	2	1	2	1	2	1	2	1	2
18 VACC VIT	83.3	1.2	2	2	1	2			1	2	1	2	2	2
19 CORN CAN	66.7	2.3	4	2	1	2			2	2	7	2		
20 MITE NUD	66.7	1.0			1	2			2	2	2	2	1	2
21 PETA PAL	66.7	0.8			1	2			1	2	2	2	1	2
22 EQUI PRA	50.0	1.7	1	2			1	2	8	2				
23 SMIL TRI	50.0	0.7			1	2					2	2	1	2
24 ACHI MIL	50.0	0.5			1	2			1	2			1	2
25 MERT PAN	33.3	0.8			2	2					3	2		
26 EQUI SYL	33.3	0.5			2	2							1	2
27 RUBU PUB	33.3	0.5							1	2	2	2		
28 GALI BOR	33.3	0.3									1	2	1	2
29 ORTH SEC	33.3	0.3									1	2	1	2
30 OXYC MIC	33.3	0.3			1	2							1	2
31 EQUI ARV	16.7	1.8									11	2		
32 ANEM PAR	16.7	0.2									1	2		
33 GEUM TRI	16.7	0.2									1	2		
34 MAIA CAN	16.7	0.2									1	2		
35 RUBU ACU	16.7	0.2									1	2		
36 RUBU CHA	16.7	0.2											1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	11	

PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G P186		3G P028		3G P202		3G P027		3G P168		3G P037	
NUMBER OF SPECIES PER PLOT	25.0		18		31		13		28		33		27	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
G LAYER														
37 CARE VAG	50.0	1.0			3	2			2	2			1	2
38 CARE SPP	33.3	6.3							2	2	36	2		
39 CARE TEN	16.7	0.3							2	2				
40 CARE DIS	16.7	0.2											1	2
41 CARE PAU	16.7	0.2							1	2				
D LAYER														
42 PLEU SCH	100.0	24.2	75	2	20	2	33	2	2	2	13	2	2	2
43 HYLO SPL	83.3	33.3			60	2	43	2	50	2	30	2	17	2
44 PTIL CRI	66.7	10.0	5	2			4	2	33	2	18	2		
45 AULA PAL	50.0	1.0			1	2			2	2			3	2
46 PLAG ELL	33.3	2.8							5	2	12	2		
47 DICR POL	33.3	0.7							3	2	1	2		
48 TOME NIT	33.3	0.7							3	2			1	2
49 SPHA RUS	16.7	10.8											65	2
50 SPHA NEM	16.7	0.8			5	2								
51 SPHA WAR	16.7	0.3									2	2		
52 DICR UND	16.7	0.2			1	2								
53 POLY STR	16.7	0.2			1	2								
L LAYER														
54 PELT APH	50.0	0.8			2	2	2	2	1	2				
55 CLAD MIT	33.3	0.5	2	2	1	2								
56 PELT CAN	16.7	0.3					2	2						
57 CLAD COR	16.7	0.2			1	2								
58 CLAD ECM	16.7	0.2									1	2		

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TITLE : MW 11 PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

		3G	3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	P186	PO28	P202	PO27	P168	PO37
TOWNSHIP & RANGE		66 1	66 7	68 5	66 6	6512	66 8
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 10	83L 15	83L 10	83L 12	83L 11
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	803.3	835	850	695	780	850	810
SLOPE(%)	0.3	0	1	1	0	0	0
ASPECT(DEG)			256	156			
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		HG	SHD	HG	SHD	SHD	SHD
NUTRIENT REGIME		SM	SM	M	M	M	SM
OVERLYING MATERIAL			Ov	GLv	Ov	GL1	Ov
UNDERLYING MATERIAL			GL1	GF1	GL		GL1
EROSION/DEPOSITION							
SOIL SUBGROUP		O	T	O	T	T	T
SOIL GREAT GROUP		LG	M	LG	M	M	M
SOIL DRAINAGE		I	VP	P	P	P	VP
SOLUM THICKNESS(CM)	46.7	33	40	75	40	50	42
TYPE & DEPTH TO RESTRICT(CM)						W 10	
THICKNESS LFH(CM)	10.3	15		12	4		
pH-LFH	0.0						
-A	7.0	6.0		8.0			
-B	7.0	6.0		8.0			
-C	7.8	8.0		8.0	7.0	8.0	
TEXTURE-A/1		S1	m	S1C	m	m	m
-B/2		S1CL		S1C			
-C/3		CL	CL	S	CL	S1CL	S1C
COARSE FRAGMENTS-B(%)	0.0						
SEEPAGE(*) & MOTTLING(CM)		0		* 25		* 50	*
ROOTING DEPTH(CM)	0.0						
VEGETATION :							
ASSOCIATION							
STAND AGE(YR)	125.3		125	125		139	112
CANOPY HEIGHT(M)	16.8	20	10	16	17	24	14
MEAN ANNUAL INCREMENT	0.0						
STRATA COVERAGE(%)-A	40.8	30	50	50	60	30	25
-B	26.8	55	60	1	15	10	20
-C	13.0	10	10	3	15	30	10
-G	7.3	2	2	0	2	36	2
-D	87.3	80	95	80	99	75	95
-L	1.3	1	2	4	0	1	0
SURFACE SUBST(%)-DEAD WOOD	3.7	0	1	15	1	5	0
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0
-ORGANIC	77.5	0	98	85	94	93	95
-OPEN WATER	2.2	0	1	0	5	2	5
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	12	

LARIX LARICINA-PICEA MARIANA/CAREX SPP/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G 183A		3G P194		3G P112		3G P123		3G P124	
NUMBER OF SPECIES PER PLOT	22.2		13		17		39		20		22	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 LARI LAR	80.0	5.6	15	2	2	2	10	2			1	2
2 PICE MAR	60.0	1.2					1	2	2	2	3	2
3 LEDU GRO	20.0	10.0									50	2
A2 LAYER												
PICE MAR	60.0	3.0					5	2	5	2	5	2
LARI LAR	40.0	2.2					10	2			1	2
LEDU GRO	20.0	8.0									40	2
B1 LAYER												
PICE MAR	60.0	2.2					5	2	5	2	1	2
LARI LAR	40.0	2.2					10	2			1	2
4 SALI MYR	20.0	1.0					5	2				
B2 LAYER												
PICE MAR	60.0	3.6					2	2	12	2	4	2
LARI LAR	60.0	0.6			1	2	1	2			1	2
LEDU GRO	40.0	9.4					7	2	40	2		
5 BETU OCC	40.0	1.8			2	2	7	2				
SALI MYR	40.0	0.6			2	2	1	2				
6 BETU SPP	20.0	8.0	40	2								
7 BETU GLA	20.0	6.0			30	2						
8 SALI SPP	20.0	2.0	10	2								
9 LONI INV	20.0	1.0					5	2				
10 SALI DRU	20.0	0.4					2	2				
11 RIBE INE	20.0	0.2					1	2				
12 RIBE TRI	20.0	0.2					1	2				
13 SALI BEB	20.0	0.2					1	2				
14 SALI PLA	20.0	0.2					1	2				
15 SHEP CAN	20.0	0.2					1	2				
C LAYER												
16 SMIL TRI	60.0	4.2			2	2			12	2	7	2
17 OXYC MIC	60.0	0.6	1	2					1	2	1	2
18 RUBU CHA	40.0	1.8							8	2	1	2
19 ANDR POL	40.0	1.2							1	2	5	2
20 RUBU ARC	40.0	0.6			1	2	2	2				
21 MENY TRI	20.0	4.0	20	2								
22 EQUI ARV	20.0	1.0	5	2								
23 PETA SAG	20.0	0.6					3	2				
24 BETU PUM	20.0	0.4	2	2								
25 EQUI PRA	20.0	0.4					2	2				
26 MERT PAN	20.0	0.4					2	2				
27 MITE NUD	20.0	0.4					2	2				
28 ASTE SUB	20.0	0.2					1	2				
29 EPIL CIL	20.0	0.2			1	2						
30 EQUI SCI	20.0	0.2					1	2				
31 EQUI SYL	20.0	0.2					1	2				
32 FRAG VIR	20.0	0.2					1	2				
33 GALI BOR	20.0	0.2					1	2				
34 KALM POL	20.0	0.2	1	2								

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	12	

LARIX LARICINA-PICEA MARIANA/CAREX SPP/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		3G 183A		3G P194		3G P112		3G P123		3G P124	
NUMBER OF SPECIES PER PLOT	22.2		13		17		39		20		22	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
35 LINN BOR	20.0	0.2					1	2				
36 PETA PAL	20.0	0.2					1	2				
37 SPIR ROM	20.0	0.2									1	2
38 STEL LON	20.0	0.2			1	2						
39 VACC VIT	20.0	0.2							1	2		
G LAYER												
40 CARE AQU	60.0	6.0	3	2	26	2	1	2				
41 ERIO VAG	40.0	0.6							1	2	2	2
42 CALA STR	20.0	1.0					5	2				
43 CARE MIC	20.0	0.6	3	2								
44 CARE SPP	20.0	0.6			3	2						
45 CARE DIS	20.0	0.4					2	2				
46 CARE PAU	20.0	0.4									2	2
47 PEDI PAR	20.0	0.4	2	2								
48 CALA CAN	20.0	0.2			1	2						
D LAYER												
49 TOME NIT	60.0	23.2	80	2	35	2	1	2				
50 SPHA WAR	60.0	18.0	20	2	42	2	28	2				
51 SPHA MAG	40.0	24.6							35	2	88	2
52 MYLI ANO	40.0	5.0							13	2	12	2
53 AULA PAL	40.0	1.4			3	2	4	2				
54 PLAG ELL	40.0	1.4			1	2	6	2				
55 SPHA ANG	20.0	7.0							35	2		
56 DREP UNC	20.0	0.2					1	2				
57 HELO BLA	20.0	0.2			1	2						
L LAYER												
58 CLAD DEF	40.0	1.0							4	2	1	2
59 CLAD MIT	40.0	0.6							2	2	1	2
60 CLAD CRI	20.0	0.4							2	2		
61 CLAD CEN	20.0	0.2									1	2
62 CLAD GON	20.0	0.2							1	2		
63 CLAD GRA	20.0	0.2							1	2		
64 ICMA ERI	20.0	0.2							1	2		

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY

TITLE : MW 12 LARIX LARICINA-PICEA MARIANA/CAREX SPP/SPHAGNUM SPP

TABLE 12

		3G	3G	3G	3G	3G
PLOT NUMBER	MEAN	183A	P194	P112	P123	P124
TOWNSHIP & RANGE		65 2	64 1	67 8	68 7	67 7
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 9	83L 9	83L 14	83L 14	83L 14
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	766.0	810	815	780	705	720
SLOPE(%)	0.0	0	0	0	0	0
ASPECT(DEG)						
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		SHD	SHD	SHD	SHD	HD
NUTRIENT REGIME		PM	PM	M	SM	PM
OVERLYING MATERIAL					O	Oo
UNDERLYING MATERIAL					GFs	
EROSION/DEPOSITION						
SOIL SUBGROUP			O		TY	TY
SOIL GREAT GROUP			G		M	M
SOIL DRAINAGE			P		VP	VP
SOLUM THICKNESS(CM)	120.0					120
TYPE & DEPTH TO RESTRICT(CM)					W O	
THICKNESS LFH(CM)	0.0					
pH-LFH	0.0					
-A	0.0					
-B	0.0					
-C	0.0					
TEXTURE-A/1					m	f
-B/2						f
-C/3						
COARSE FRAGMENTS-B(%)	0.0					
SEEPAGE(*) & MOTTLING(CM)					*	
ROOTING DEPTH(CM)	0.0					
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	67.0			50	84	
CANOPY HEIGHT(M)	8.7		10	8	8	
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	11.8	15	2	25	5	
-B	46.0	50	35	40	55	50
-C	18.0	30	5	15	25	15
-G	11.4	10	30	10	2	5
-D	87.6	99	95	60	85	99
-L	2.2	0	0	0	10	1
SURFACE SUBST(%)-DEAD WOOD	0.6	0	0	1	2	0
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	78.0	0	99	94	99	98
-OPEN WATER	1.8	0	1	5	1	2
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	13	

PICEA GLAUCA/ROSA ACICULARIS/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G P075		3G P092	
NUMBER OF SPECIES PER PLOT	36.0		37		35	
SPECIES	%P	MC	%C	SV	%C	SV
A1 LAYER						
1 PICE GLA	100.0	22.5	15	2	30	2
2 PINU BAN	50.0	2.5	5	2		
3 POPU BAL	50.0	2.5			5	2
A2 LAYER						
PICE GLA	100.0	3.0	5	2	1	2
POPU BAL	50.0	2.5			5	2
4 POPU TRE	50.0	2.5	5	2		
5 BETU PAP	50.0	0.5	1	2		
PINU BAN	50.0	0.5	1	2		
B1 LAYER						
6 ALNU CRI	50.0	2.5	5	2		
PICE GLA	50.0	0.5	1	2		
POPU BAL	50.0	0.5			1	2
B2 LAYER						
7 ROSA ACI	100.0	10.0	10	2	10	2
PICE GLA	100.0	1.0	1	2	1	2
8 AMEL ALN	50.0	5.0			10	2
9 RUBU IDA	50.0	4.0			8	2
10 CORY COR	50.0	3.5			7	2
ALNU CRI	50.0	1.5	3	2		
POPU TRE	50.0	1.5			3	2
11 VACC MYR	50.0	1.5	3	2		
12 VIBU EDU	50.0	1.5			3	2
13 LEDU GRO	50.0	1.0	2	2		
14 LONI INV	50.0	1.0			2	2
15 SPIR BET	50.0	1.0			2	2
16 BETU OCC	50.0	0.5			1	2
17 SHEP CAN	50.0	0.5	1	2		
C LAYER						
18 LINN BOR	100.0	7.0	9	2	5	2
19 CORN CAN	100.0	5.5	7	2	4	2
20 EPIL ANG	100.0	1.0	1	2	1	2
21 GALI BOR	100.0	1.0	1	2	1	2
22 LATH OCH	100.0	1.0	1	2	1	2
23 MAIA CAN	100.0	1.0	1	2	1	2
24 ARAL NUD	50.0	3.0			6	2
25 LYCO COM	50.0	3.0	6	2		
26 ARCT UVA	50.0	2.5	5	2		
27 ASTE CON	50.0	0.5			1	2
28 FRAG VIR	50.0	0.5	1	2		
29 GEOC LIV	50.0	0.5	1	2		
30 HALE DEF	50.0	0.5	1	2		
31 MERT PAN	50.0	0.5			1	2
32 MITE NUD	50.0	0.5			1	2
33 ORTH SEC	50.0	0.5	1	2		
34 PETA PAL	50.0	0.5			1	2
35 PYRO ASA	50.0	0.5			1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MW	13	

PICEA GLAUCA/ROSA ACICULARIS/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	AVERAGE VALUE		3G P075		3G P092	
NUMBER OF SPECIES PER PLOT	36.0		37		35	
SPECIES	%P	MC	%C	SV	%C	SV
36 RUBU PED	50.0	0.5			1	2
37 RUBU PUB	50.0	0.5			1	2
38 VACC VIT	50.0	0.5	1	2		
39 VIOL NEP	50.0	0.5	1	2		
G LAYER						
40 ELYM INN	100.0	1.0	1	2	1	2
41 ORYZ EXI	50.0	1.0	2	2		
42 CALA STR	50.0	0.5			1	2
43 CARE AQU	50.0	0.5	1	2		
D LAYER						
44 PLEU SCH	100.0	17.5	34	2	1	2
45 HYLO SPL	100.0	1.0	1	2	1	2
46 DICR SCO	50.0	2.0	4	2		
47 BRAC SAL	50.0	0.5	1	2		
48 EURH PUL	50.0	0.5			1	2
49 PLAG DRU	50.0	0.5			1	2
50 PTIL CRI	50.0	0.5	1	2		
L LAYER						
51 CLAD MIT	50.0	0.5	1	2		

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 13

TITLE : MW 13 PICEA GLAUCA/ROSA ACICULARIS/ELYMUS INNOVATUS

	MEAN	3G	3G
PLOT NUMBER		P075	P092
TOWNSHIP & RANGE		69 8	67 4
MERIDIAN		W 6	W 6
MAPSHEET		83L	83L
		14	15
PHYSIOGRAPHIC SUBREGION			
GEOMORPHIC SYSTEM			
ECOSECTION			
ELEVATION(MASL)	697.5	715	680
SLOPE(%)	4.5	9	0
ASPECT(DEG)		160	
ENVIRONMENT/SOILS :			
ECOLOGICAL MOISTURE REGIME		SX	SM
NUTRIENT REGIME		SM	SM
OVERLYING MATERIAL			GF1
UNDERLYING MATERIAL		ER1	
EROSION/DEPOSITION			
SOIL SUBGROUP		PZ	E
SOIL GREAT GROUP		GL	DYB
SOIL DRAINAGE		R	W
SOLUM THICKNESS(CM)	39.0	49	29
TYPE & DEPTH TO RESTRICT(CM)			
THICKNESS LFH(CM)	7.0	6	8
pH-LFH	0.0		
-A	5.0	5.0	5.0
-B	5.5	6.0	5.0
-C	7.0	8.0	6.0
TEXTURE-A/1		S	SL
-B/2		SL	SL
-C/3		SL	S
COARSE FRAGMENTS-B(%)	0.0		
SEEPAGE(*) & MOTTLING(CM)			
ROOTING DEPTH(CM)	0.0		
VEGETATION :			
ASSOCIATION			
STAND AGE(YR)	82.0	56	108
CANOPY HEIGHT(M)	25.5	21	30
MEAN ANNUAL INCREMENT	0.0		
STRATA COVERAGE(%)-A	32.5	30	35
-B	37.5	25	50
-C	30.0	35	25
-G	3.5	5	2
-D	23.5	45	2
-L	0.0	0	0
SURFACE SUBST(%)-DEAD WOOD	1.0	1	1
-BEDROCK	0.0	0	0
-STONES	0.0	0	0
-MIN.SOIL	0.0	0	0
-ORGANIC	99.0	99	99
-OPEN WATER	0.0	0	0
BIOMASS(KG/HA)-FORBS	0.0		
-GRAMINOIDS	0.0		
-BROWSE	0.0		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	1	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE VALUE		3G		3G		3G		3G		3G		3G		3G		3G		3G		20		20		GP		GP	
PLOT NUMBER			P026		P32A		P033		P034		P041		P038		P119		P040		P181		8522		8547		4130		4125	
NUMBER OF SPECIES PER PLOT	37.9		34		42		36		40		30		29		29		29		31		35		36		55		67	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																												
1 PINU CON	100.0	32.5	40	2	20	2	30	2	50	2	30	2	30	2	35	2	60	2	15	2	30	2	53	2	20	3	10	3
2 POPU TRE	53.8	4.8					30	2			3	2	20	2	2	2			2	2	1	2					5	3
3 PICE GLA	38.5	2.9							1	2									15	2			2	2	10	3	10	3
4 POPU BAL	23.1	1.1							10	2									1	2			3	2				
5 PICE MAR	7.7	0.2																			2	2						
6 ABIE BAL	7.7	0.1																	1	2								
7 SALI SPP	7.7	0.1													1	2												
A2 LAYER																												
PINU CON	69.2	2.3	2	2			1	2			2	2	1	2	10	2	2	2					2	2	5	3	5	3
PICE GLA	38.5	2.2							1	2									5	2			13	2	5	3	5	3
POPU TRE	23.1	0.6					2	2			1	2							5	2								
PICE MAR	15.4	1.1											1	2							13	2						
8 SALI GLA	15.4	0.3			3	2											1	2										
9 BETU OCC	15.4	0.2	1	2					1	2																		
10 BETU PAP	7.7	0.2			2	2																						
11 ABIE LAS	7.7	0.1																			1	2						
12 ALNU CRI	7.7	0.1	1	2																								
13 ALNU TEN	7.7	0.1							1	2																		
POPU BAL	7.7	0.1							1	2																		
14 SALI SCO	7.7	0.1											1	2														
SALI SPP	7.7	0.1							1	2																		
E LAYER																												
15 BRYO FUS	15.4	0.1																							.5	3	.5	3
16 CETR PIN	15.4	0.1																							.5	3	.5	3
17 HYPO PHY	15.4	0.1																							.5	3	.5	3
18 PARM SUL	15.4	0.1																							.5	3	.5	3
19 PLAT GLA	15.4	0.1																							.5	3	.5	3
20 USNE ALP	15.4	0.1																							.5	3	.5	3
21 USNE SOR	15.4	0.1																							.5	3	.5	3
22 USNE SUB	15.4	0.1																							.5	3	.5	3
23 BRYO CAP	7.7	0.0																							.5	3		
24 BRYO FRE	7.7	0.0																									.5	3
25 BRYO FUR	7.7	0.0																									.5	3
26 CETR CHL	7.7	0.0																									.5	3
27 CETR HAL	7.7	0.0																									.5	3
28 HYPO TUB	7.7	0.0																							.5	3		
29 PARM ALE	7.7	0.0																									.5	3
30 PARM AMB	7.7	0.0																									.5	3
31 PARM HYP	7.7	0.0																							.5	3		
32 RAMA THR	7.7	0.0																							.5	3		
B1 LAYER																												
ALNU CRI	38.5	1.0	1	2					5	2			5	2			1	2			1	2						
PICE GLA	38.5	0.4			1	2	1	2	2	2							1	2							.5	3		
BETU OCC	30.8	0.5	2	2			3	2	1	2							1	2										
ABIE LAS	15.4	0.2							2	2											1	2						
SALI GLA	15.4	0.2							1	2							2	2										
SALI SPP	15.4	0.2			1	2							2	2														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	1	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 14 PAGE 2

	AVERAGE VALUE		3G		3G		3G		3G		3G		3G		3G		3G		3G		20		20		GP		GP	
PLOT NUMBER			PO26		P32A		PO33		PO34		PO41		PO38		P119		PO40		P181		8522		8547		4130		4125	
NUMBER OF SPECIES PER PLOT	37.9		34		42		36		40		30		29		29		29		31		35		36		55		67	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
PICE MAR	7.7	0.2																			2	2						
ALNU TEN	7.7	0.1					1	2																				
BETU PAP	7.7	0.1			1	2																						
POPU TRE	7.7	0.1					1	2																				
33 SORB SCO	7.7	0.1			1	2																						
B2 LAYER																												
34 VIBU EDU	100.0	8.5	4	2	13	2	12	2	4	2	8	2	17	2	4	2	6	2	4	2	1	2	30	2	5	3	2	3
35 ROSA ACI	100.0	7.5	3	2	1	2	8	2	4	2	10	2	7	2	12	2	2	2	5	2	5	2	15	2	15	3	10	3
36 SPIR BET	100.0	4.8	1	2	5	2	3	2	3	2	8	2	10	2	3	2	3	2	1	2	1	2	10	2	5	3	10	3
37 LONI INV	61.5	2.6	4	2	7	2	1	2	3	2									10	2			3	2	.5	3	5	3
SORB SCO	53.8	0.8	3	2	1	2	1	2	1	2							2	2			2	2			.5	3		
PICE GLA	53.8	0.7			4	2	1	2			1	2					1	2					1	2	.5	3	1	3
ALNU CRI	46.2	3.2					10	2	9	2	15	2	2	2	5	2											.5	3
38 RUBU PAR	38.5	2.6			2	2			1	2													15	2	15	3	.5	3
39 RIBE LAC	38.5	0.4			2	2	1	2	1	2													1	2	.5	3		
BETU OCC	30.8	0.7	1	2			6	2	1	.2							1	2										
40 AMEL ALN	30.8	0.5			1	2	1	2															2	2			2	3
POPU TRE	30.8	0.4											3	2	1	2									.5	3	1	3
ABIE LAS	30.8	0.3			1	2			1	2											1	2			.5	3		
41 RUBU IDA	23.1	0.3	1	2							1	2											2	2				
42 CORN STO	23.1	0.2					1	2	1	2															.5	3		
43 OPLO HOR	15.4	2.2	3	2																							25	3
44 LEDU GRO	15.4	0.5	1	2																	5	2						
45 VACC MEM	15.4	0.5											1	2			6	2										
46 RIBE OXY	15.4	0.2																	1	2							2	3
SALI GLA	15.4	0.2	1	2													1	2										
BETU PAP	15.4	0.1			1	2																					.5	3
PICE MAR	7.7	0.2																			2	2						
47 RIBE TRI	7.7	0.2																									2	3
SALI SCO	7.7	0.2													3	2												
PINU CON	7.7	0.1			1	2																						
SALI SPP	7.7	0.1			1	2																						
48 SYMP ALB	7.7	0.1															1	2										
49 VACC MYR	7.7	0.1											1	2														
C LAYER																												
50 CORN CAN	100.0	7.5	8	2	6	2	11	2	5	2	8	2	8	2	7	2	5	2	9	2	9	2	11	2	5	3	5	3
51 LINN BOR	100.0	3.6	1	2	2	2	6	2	2	2	5	2	2	2	4	2	3	2	4	2	3	2	2	2	5	3	8	3
52 ARAL NUD	92.3	9.8	6	2	5	2	8	2	7	2	18	2	27	2	3	2	1	2			3	2	6	2	25	3	18	3
53 RUBU PUB	84.6	2.2	1	2	4	2	1	2	1	2	4	2	3	2					2	2	2	2	7	2	.5	3	3	3
54 MAIA CAN	84.6	1.4	2	2			1	2	1	2	1	2	1	2	1	2	1	2			1	2	2	2	5	3	2	3
55 EPIL ANG	76.9	3.4	4	2	2	2					6	2	23	2	1	2	1	2	3	2	2	2			2	3	.5	3
56 MITE NUD	76.9	0.9	1	2	1	2			1	2	1	2	1	2					1	2	1	2	2	2	.5	3	2	3
57 ARNI COR	69.2	2.0			1	2			1	2	2	2	14	2	1	2			1	2			1	2	2	3	3	3
58 PYRO ASA	69.2	1.8			1	2	1	2	1	2	2	2	2	2	5	2							3	2	5	3	3	3
59 GYMN DRY	61.5	2.8	4	2	1	2			1	2							1	2			1	2	13	2	10	3	5	3
60 LYCO ANN	61.5	2.2	1	2	10	2	1	2	6	2	5	2	2	2							1	2	2	2				
61 PETA PAL	53.8	1.2	1	2	1	2					1	2							2	2			3	2	2	3	5	3
62 LATH OCH	53.8	1.0			1	2	2	2							1	2			1	2			2	2	.5	3	5	3

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	1	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 14 PAGE 3

PLOT NUMBER	AVERAGE VALUE		3G PO26		3G P32A		3G PO33		3G PO34		3G PO41		3G PO38		3G P119		3G PO40		3G P181		20 8522		20 8547		GP 4130		GP 4125	
NUMBER OF SPECIES PER PLOT	37.9		34		42		36		40		30		29		29		29		31		35		36		55		67	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
63 VIOL REN	53.8	0.5	1	2	1	2	1	2	1	2	1	2	1	2					1	2								
64 SMIL RAC	46.2	1.2	1	2			1	2	2	2													5	2	5	3	2	3
65 EQUI SYL	46.2	0.7							1	2	1	2									1	2	1	2	5	3	.5	3
66 ASTE CON	38.5	0.8			2	2	1	2			1	2							3	2			4	2				
67 STRE AMP	23.1	1.4			10	2																			5	3	3	3
68 EQUI PRA	23.1	0.5																	1	2					5	3	.5	3
69 ORTH SEC	15.4	0.5																			1	2			5	3		
70 ACTA RUB	15.4	0.4																							.5	3	5	3
71 DRYO CAR	15.4	0.2							1	2											2	2						
72 EQUI ARV	15.4	0.2																			1	2	1	2				
73 GALI TRI	15.4	0.2	1	2																					2	3		
74 MERT PAN	15.4	0.2																	2	2							.5	3
75 RUBU PED	15.4	0.2																			1	2					2	3
76 ERIG SPP	7.7	0.8																							10	3		
77 VACC CAE	7.7	0.3					4	2																				
78 TIAR UNI	7.7	0.2																									2	3
79 VACC VIT	7.7	0.2																			2	2						
80 VIOL ADU	7.7	0.2																					2	2				
81 ASTE CIL	7.7	0.1																	1	2								
82 DISP TRA	7.7	0.1			1	2																						
83 EQUI SCI	7.7	0.1																	1	2								
84 FRAG VIR	7.7	0.1																	1	2								
85 GAUL HIS	7.7	0.1															1	2										
86 GOOD OBL	7.7	0.1													1	2												
87 HABA ORB	7.7	0.1															1	2										
88 OSMO DEP	7.7	0.1																					1	2				
89 PYRO CHL	7.7	0.1											1	2														
90 DELP GLA	7.7	0.0																									.5	3
91 HERA LAN	7.7	0.0																									.5	3
G LAYER																												
92 CALA STR	46.2	0.5	2	2	1	2	1	2					1	2							1	2	1	2				
93 ELYM INN	30.8	0.3									1	2			1	2	1	2	1	2								
94 CALA CAN	15.4	0.8																							.5	3	10	3
95 CALA SPP	7.7	0.1	1	2																								
D LAYER																												
96 PLEU SCH	100.0	16.2	2	2	40	2	5	2	8	2	4	2	13	2	2	2	50	2	6	2	36	2	31	2	3	3	10	3
97 PTIL CRI	92.3	8.5	1	2	22	2	2	2	2	2	2	2	2	2			19	2	1	2	9	2	26	2	4	3	20	3
98 HYLO SPL	69.2	5.3			2	2	1	2			1	2					1	2	6	2	28	2	17	2	3	3	10	3
99 DICR BRE	15.4	0.2	2	2											1	2												
100 DICR POL	15.4	0.2			1	2									1	2												
101 DICR SCO	15.4	0.2											1	2							1	2						
102 DICR FUS	15.4	0.1					1	2																			.5	3
103 POLY JUN	15.4	0.1													1	2											.5	3
104 PTIL PUL	7.7	0.8																									10	3
105 BRAC SAL	7.7	0.1													1	2												
106 BRAC SPP	7.7	0.1									1	2																
107 CLAD MIT	7.7	0.1															1	2										
108 PLAG MED	7.7	0.1			1	2																						

University of Alberta

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	1	

PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE VALUE		3G		3G		3G		3G		3G		3G		3G		3G		3G		20		20		GP		GP	
PLOT NUMBER			P026		P32A		P033		P034		P041		P038		P119		P040		P181		8522		8547		4130		4125	
NUMBER OF SPECIES PER PLOT	37.9		34		42		36		40		30		29		29		29		31		35		36		55		67	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
109 PTIL CIL	7.7	0.1													1	2												
SALI SPP	7.7	0.1									1	2																
110 CERA PUR	7.7	0.0																									.5	3
111 POHL NUT	7.7	0.0																									.5	3
L LAYER																												
112 CLAD CHL	15.4	0.1																							.5	3	.5	3
113 CLAD CON	15.4	0.1																							.5	3	.5	3
CLAD MIT	7.7	0.2													2	2												
114 CLAD GRA	7.7	0.1													1	2												
115 CLAD CEN	7.7	0.0																									.5	3
116 CLAD FIM	7.7	0.0																							.5	3		
117 CLAD GON	7.7	0.0																									.5	3

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 14

TITLE : BF 1 PINUS CONTORTA/VIBURNUM EDULE/ARALIA NUDICAULIS

		3G	3G	3G	3G	3G	3G	3G	3G	3G	20	20	GP	GP
PLOT NUMBER	MEAN	P026	P32A	P033	P034	P041	P038	P119	P040	P181	8522	8547	4130	4125
TOWNSHIP & RANGE		65 6	64 5	64 5	64 5	65 7	65 8	6713	66 7	6513	63 5	64 6	61 3	62 4
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 10	83L 10	83L 10	83L 10	83L 10	83L 11	83L 13	83L 10	83L 12	83L 7	83L 7	83L 8	83L 8
PHYSIOGRAPHIC SUBREGION														
GEOMORPHIC SYSTEM														
ECOSECTION														
ELEVATION(MASL)	965.8	880	935	930	945	1015	925	930	1030	1090	1020	960	1050	845
SLOPE(%)	6.2	7	4	0	10	3	17	0	5	6	3	2	14	10
ASPECT(DEG)		24	98		22	280	25		226	236	290	60	230	350
ENVIRONMENT/SOILS :														
ECOLOGICAL MOISTURE REGIME		HG	SHG	M	M	M	M	M	M	SHG	SM	SHG	SHG	M
NUTRIENT REGIME		PM				M		M		SM			M	M
OVERLYING MATERIAL		Mb	M	Mbh	Mbh	Pvm	Mb	GFv	Mbm	Mi	M	M	M	M
UNDERLYING MATERIAL				R	R	R	R1	M	R					
EROSION/DEPOSITION														
SOIL SUBGROUP		GL	BR	BR	BR	O	BR	O	E	E			GLE	O
SOIL GREAT GROUP		GL	GL	GL	GL	GL	GL	GL	DYB	EB		M	DYB	GL
SOIL DRAINAGE		I	MW	MW	MW	W	W	W	W	MW	W	W	MW	MW
SOLUM THICKNESS(CM)	37.6	29			26	30	41	35	47	41			39	50
TYPE & DEPTH TO RESTRICT(CM)														
THICKNESS LFH(CM)	8.3	8			10	10	5	6	10	6			11	9
pH-LFH	5.0												4.9	5.1
-A	5.1	4.0		5.0	5.0	6.0	5.0	6.0	5.0	6.0			4.6	4.6
-B	5.7	5.0		5.0	5.0	6.0	6.0	8.0	5.0	8.0			4 9	4.6
-C	5.8	6.0		6.0	6.0	5.0	6.0	6.0	4.0	8.0			5.0	
TEXTURE-A/1		SiL		SiL	SiL	SiL	LS	LS	SiL	SiL			SiL	L
-B/2		SiCL		SiCL	SiCL	SiCL	SiCL	CL	SiCL	SiCL			L	L
-C/3		SiL		SiCL	SiCL	SCL	SC	CL	SCL	SiCL			CL	CL
COARSE FRAGMENTS-B(%)	15.2	15		15	15		25	20						1
SEEPAGE(*) & MOTTLING(CM)										*				
ROOTING DEPTH(CM)	50.0													50
VEGETATION :														
ASSOCIATION														
STAND AGE(YR)	99.0		92	86	78	87	85	78		92			143	150
CANOPY HEIGHT(M)	23.5	21	22	31	23	27	22	21	18	25			20	29
MEAN ANNUAL INCREMENT	0.0													
STRATA COVERAGE(%)-A	45.8	45	25	60	60	40	55	45	60	45	45	40	40	35
-B	36.5	25	45	45	35	45	35	15	15	15	20	75	40	65
-C	43.8	30	40	30	30	55	60	15	10	30	40	70	89	70
-G	1.6	2	0	1	0	1	1	1	1	1	1	1	1	10
-D	37.9	10	90	10	40	10	15	3	90	15	75	75	10	50
-L	1.7	0	0	0	0	0	0	2	0	0	0	0	10	10
SURFACE SUBST(%)-DEAD WOOD	7.2	10	3	2	1	10	2	10	20	8	10	2	5	10
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	92.8	90	97	97	99	90	98	90	80	92	90	98	95	90
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0													
-GRAMINOIDS	0.0													
-BROWSE	0.0													

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	2	

POPULUS TREMULOIDES/VIBURNUM EDULE/ARALIA NUDICAULIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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	AVERAGE VALUE		3G		20		3B		3G	
PLOT NUMBER			P031		8631		F065		P169	
NUMBER OF SPECIES PER PLOT	36.3		33		35		47		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 POPU TRE	100.0	32.5	25	2	25	2	60	2	20	2
2 POPU BAL	50.0	10.0	20	2	20	2				
3 PICE GLA	25.0	2.3			9	2				
A2 LAYER										
POPU TRE	75.0	2.8	1	2			5	2	5	2
POPU BAL	25.0	1.3	5	2						
PICE GLA	25.0	0.3			1	2				
4 SALI BEB	25.0	0.3							1	2
E LAYER										
5 USNE GLA	25.0	0.8					3	2		
6 USNE SUB	25.0	0.5					2	2		
7 BRAC CAM	25.0	0.3	1	2						
B1 LAYER										
8 ALNU CRI	75.0	4.0	5	2	10	2	1	2		
POPU BAL	50.0	1.0	2	2	2	2				
POPU TRE	25.0	1.3			5	2				
PICE GLA	25.0	0.8			3	2				
B2 LAYER										
9 VIBU EDU	100.0	9.3	20	2	4	2	10	2	3	2
10 ROSA ACI	100.0	6.0	17	2	4	2	2	2	1	2
ALNU CRI	75.0	11.8	21	2			3	2	23	2
11 SPIR BET	75.0	5.0	3	2	2	2	15	2		
12 AMEL ALN	75.0	1.8	4	2	2	2	1	2		
13 LONI INV	75.0	1.8			5	2	1	2	1	2
14 LEDU GRO	50.0	2.5					2	2	8	2
15 RUBU IDA	50.0	1.0	2	2	2	2				
POPU TRE	50.0	0.8			2	2			1	2
16 VACC MYR	25.0	5.0							20	2
17 CORN STO	25.0	1.5	6	2						
PICE GLA	25.0	0.8			3	2				
POPU BAL	25.0	0.5			2	2				
18 RIBE LAC	25.0	0.5			2	2				
19 RUBU PAR	25.0	0.5	2	2						
20 SALI SCO	25.0	0.5					2	2		
21 SYMP ALB	25.0	0.5	2	2						
22 RIBE TRI	25.0	0.3			1	2				
C LAYER										
23 CORN CAN	100.0	6.0	3	2	3	2	2	2	16	2
24 RUBU PUB	100.0	4.3	3	2	4	2	8	2	2	2
25 EPIL ANG	100.0	4.0	1	2	1	2	5	2	9	2
26 MITE NUD	100.0	2.0	1	2	4	2	2	2	1	2
27 PETA PAL	100.0	2.0	1	2	1	2	4	2	2	2
28 ARAL NUD	75.0	6.5	10	2	11	2	5	2		
29 ASTE CON	75.0	3.8			4	2	10	2	1	2
30 LINN BOR	75.0	2.8	1	2			5	2	5	2
31 PYRO ASA	75.0	1.3	1	2	3	2	1	2		
32 ARNI COR	75.0	0.8	1	2	1	2			1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	2	

POPULUS TREMULOIDES/VIBURNUM EDULE/ARALIA NUDICAULIS

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 15 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P031		20 8631		3B F065		3G P169	
NUMBER OF SPECIES PER PLOT	36.3		33		35		47		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
33 MERT PAN	50.0	2.5	5	2			5	2		
34 VACC CAE	50.0	1.8					5	2	2	2
35 ACTA RUB	50.0	1.5			4	2	2	2		
36 LATH OCH	50.0	1.5	1	2			5	2		
37 EQUI SYL	50.0	0.8			2	2			1	2
38 GALI TRI	50.0	0.8	2	2			1	2		
39 MAIA CAN	50.0	0.8	2	2			1	2		
40 ASTE CIL	50.0	0.5					1	2	1	2
41 ORTH SEC	50.0	0.5					1	2	1	2
42 VIOL REN	50.0	0.5	1	2	1	2				
43 VIOL CAN	25.0	2.0					8	2		
44 CAST MIN	25.0	0.8							3	2
45 SMIL RAC	25.0	0.5			2	2				
46 DELP GLA	25.0	0.3					1	2		
47 DISP TRA	25.0	0.3	1	2						
48 EQUI ARV	25.0	0.3					1	2		
49 FRAG VIR	25.0	0.3					1	2		
50 HEDY SUL	25.0	0.3					1	2		
51 HERA LAN	25.0	0.3					1	2		
52 OSMO CHI	25.0	0.3					1	2		
53 THAL VEN	25.0	0.3					1	2		
54 VALE DIO	25.0	0.3	1	2						
55 VICI AME	25 0	0.3					1	2		
G LAYER										
56 CALA STR	50.0	2.0			6	2			2	2
57 ELYM INN	50.0	1.5	1	2			5	2		
58 CALA CAN	25.0	5.0					20	2		
D LAYER										
59 PLAG MED	75.0	2.5			2	2	1	2	7	2
60 PLEU SCH	50.0	1.5					3	2	3	2
61 BRAC SAL	50.0	1.3			2	2			3	2
62 EURH PUL	25.0	1.3					5	2		
63 HYLO SPL	25.0	1.3							5	2
64 PTIL CRI	25.0	1.3							5	2
65 DREP UNC	25.0	0.3					1	2		
66 POLY JUN	25.0	0.3							1	2
L LAYER										
67 PELT APH	25.0	0.3					1	2		
68 PELT MAL	25.0	0.3					1	2		

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RESOURCE INVENTORY
TABLE 15

ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : BF 2 POPULUS TREMULOIDES/VIBURNUM EDULE/ARALIA NUDICAULIS

	MEAN	3G	20	3B	3G
PLOT NUMBER		P031	8631	F065	P169
TOWNSHIP & RANGE		66 7	63 4	59 5	6512
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L
		10	7	2	12
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	1003.8	900	1000	1030	1085
SLOPE(%)	13.8	8	1	37	9
ASPECT(DEG)		172	215	82	20
ENVIRONMENT/SOILS :					
ECOLOGICAL MOISTURE REGIME		HG	M	SHG	SM
NUTRIENT REGIME		E		E	SM
OVERLYING MATERIAL		Mv	M	MGu	GFv
UNDERLYING MATERIAL		R			Mu
EROSION/DEPOSITION					
SOIL SUBGROUP		GL		O	BR
SOIL GREAT GROUP		GL		HR	GL
SOIL DRAINAGE		I	W	I	W
SOLUM THICKNESS(CM)	25.0	21		15	39
TYPE & DEPTH TO RESTRICT(CM)				W 27	
THICKNESS LFH(CM)	4.7	7		2	5
pH-LFH	0.0				
-A	7.0	8.0		8.0	5.0
-B	6.5	8.0			5.0
-C	7.3	8.0		8.0	6.0
TEXTURE-A/1		SIL			LS
-B/2		SICL			CL
-C/3		CL		L	SICL
COARSE FRAGMENTS-B(%)	35.0				35
SEEPAGE(*) & MOTTLING(CM)		*		*	
ROOTING DEPTH(CM)	27.0			27	
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	0.0				
CANOPY HEIGHT(M)	24.0	19	33	23	21
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	48.8	50	55	65	25
-B	55.0	80	55	30	55
-C	48.8	30	60	60	45
-G	8.5	1	6	25	2
-D	10.0	1	4	10	25
-L	0.3	0	0	1	0
SURFACE SUBST(%)-DEAD WOOD	6.0	2	10	7	5
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0
-ORGANIC	94.0	98	90	93	95
-OPEN WATER	0.0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	3	

PICEA GLAUCA/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 16 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P104		3G P142		3G P217		20 8645		GP 4120		3G P097		GP 4123	
NUMBER OF SPECIES PER PLOT	39.9		35		28		19		36		62		35		64	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 PICE GLA	100.0	30.6	40	2	40	2	45	2	33	2	20	3	1	2	35	3
2 POPU TRE	57.1	3.0					2	2	4	2			10	2	5	3
3 PINU CON	28.6	4.6	2	2									30	2		
4 ABIE LAS	28.6	3.0	1	2							20	3				
5 POPU BAL	28.6	1.4					2	2	8	2						
A2 LAYER																
PICE GLA	71.4	3.2			10	2	5	2	2	2	5	3			.5	3
6 BETU PAP	42.9	0.6	2	2	1	2							1	2		
ABIE LAS	28.6	1.1	3	2							5	3				
POPU BAL	14.3	0.3							2	2						
7 ALNU CRI	14.3	0.1							1	2						
PINU CON	14.3	0.1													.5	3
POPU TRE	14.3	0.1							1	2						
E LAYER																
8 CETR PIN	28.6	0.1									.5	3			.5	3
9 HYPO PHY	28.6	0.1									.5	3			.5	3
10 PARM SUL	28.6	0.1									.5	3			.5	3
11 USNE ALP	28.6	0.1									.5	3			.5	3
12 USNE SUB	28.6	0.1									.5	3			.5	3
13 BRYO FRE	14.3	0.1									.5	3				
14 BRYO FUS	14.3	0.1													.5	3
15 CETR HAL	14.3	0.1													.5	3
16 RAMA FAS	14.3	0.1													.5	3
17 USNE SOR	14.3	0.1													.5	3
B1 LAYER																
ALNU CRI	42.9	1.0	1	2					5	2			1	2		
POPU TRE	28.6	0.4							2	2			1	2		
ABIE LAS	28.6	0.2	1	2							.5	3				
BETU PAP	28.6	0.2											1	2	.5	3
PICE GLA	28.6	0.2							1	2	.5	3				
18 ALNU TEN	14.3	0.7			5	2										
19 SALI BEB	14.3	0.3											2	2		
20 BETU OCC	14.3	0.1	1	2												
21 PICE MAR	14.3	0.1											1	2		
B2 LAYER																
22 VIBU EDU	100.0	8.7	5	2	3	2	5	2	20	2	10	4	13	2	5	3
23 ROSA ACI	100.0	3.6	2	2	1	2	1	2	4	2	10	4	4	2	3	3
24 LONI INV	85.7	3.6	5	2	2	2	1	2	4	2	5	4			8	3
25 SPIR BET	42.9	1.9	1	2									4	2	8	3
26 OPLO HOR	42.9	1.5	5	2							.5	3			5	3
27 SORB SCO	42.9	0.5	1	2							.5	3			2	3
ALNU CRI	28.6	5.0											33	2	2	2
28 CORN STO	28.6	2.9							15	2	5	3				
ABIE LAS	28.6	2.6	18	2							.5	3				
29 AMEL ALN	28.6	2.6									10	3			8	3
30 RUBU PAR	28.6	1.4									5	3			5	3
31 RIBE LAC	28.6	0.7	1	2					4	2						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	3	

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PICEA GLAUCA/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 16 PAGE 2

	AVERAGE VALUE		3G		3G		3G		20		GP		3G		GP	
PLOT NUMBER			P104		P142		P217		8645		4120		P097		4123	
NUMBER OF SPECIES PER PLOT	39.9		35		28		19		36		62		35		64	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
32 BETU GLA	14.3	0.7									5	3				
33 GAUL HIS	14.3	0.7									5	3				
34 RIBE HIR	14.3	0.7									5	3				
35 RIBE OXY	14.3	0.7													5	3
36 RIBE TRI	14.3	0.7													5	3
37 RUBU STR	14.3	0.7									5	3				
38 SYMP ALB	14.3	0.7							5	2						
ALNU TEN	14.3	0.3			2	2										
39 RUBU IDA	14.3	0.3							2	2						
BETU OCC	14.3	0.1	1	2												
40 LONI DIO	14.3	0.1							1	2						
PICE GLA	14.3	0.1									.5	3				
POPU BAL	14.3	0.1													.5	3
POPU TRE	14.3	0.1													.5	2
SALI BEB	14.3	0.1			1	2										
41 SALI SCO	14.3	0.1													.5	2
42 VACC MEM	14.3	0.1	1	2												
C LAYER																
43 CORN CAN	100.0	7.4	5	2	5	2	11	2	6	2	5	4	12	2	8	3
44 RUBU PUB	100.0	3.7	2	2	2	2	4	2	6	2	5	3	2	2	5	3
45 PETA PAL	100.0	3.3	1	2	3	2	1	2	2	2	5	4	1	2	10	3
46 MITE NUD	100.0	1.8	2	2	4	2	1	2	3	2	1	3	1	2	.5	3
47 LINN BOR	85.7	5.3	2	2	2	2	14	2	1	2	10	4	8	2		
48 ARAL NUD	71.4	9.0	6	2					18	2	20	4	4	2	15	3
49 PYRO ASA	71.4	1.8	1	2					4	2	5	3	2	2	.5	3
50 MERT PAN	57.1	3.9			5	2			2	2	15	4			5	3
51 VIOL REN	57.1	1.1	1	2	1	2	1	2			5	4				
52 MAIA CAN	57.1	0.9	1	2							.5	3	2	2	3	3
53 GYMN DRY	42.9	1.1	5	2							.5	2			2	3
54 DELP GLA	42.9	0.4							1	2	1	4			.5	3
55 GALI BOR	42.9	0.4			1	2					1	3			.5	3
56 SMIL RAC	28.6	2.4									10	3			7	3
57 EPIL ANG	28.6	1.8											12	2	.5	3
58 EQUI SYL	28.6	0.9	1	2											5	3
59 LATH OCH	28.6	0.9							3	2					3	3
60 ARNI COR	28.6	0.4									1	3	2	2		
61 RUBU PED	28.6	0.4									1	4			2	3
62 ASTE CIL	28.6	0.3			1	2							1	2		
63 EQUI ARV	28.6	0.3			1	2			1	2						
64 EQUI PRA	28.6	0.3			1	2					1	2				
65 FRAG VIR	28.6	0.3					1	2					1	2		
66 GALI TRI	28.6	0.3					1	2	1	2						
67 STRE AMP	14.3	1.4													10	3
68 ACTA RUB	14.3	1.0													7	3
69 THAL VEN	14.3	0.7									5	3				
70 ASTE CON	14.3	0.3							2	2						
71 HERA LAN	14.3	0.3													2	3
72 VACC VIT	14.3	0.3											2	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	3	

PICEA GLAUCA/VIBURNUM EDULE/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLF 16 PAGE 3

PLOT NUMBER	AVERAGE VALUE		3G P104		3G P142		3G P217		20 8645		GP 4120		3G P097		GP 4123	
NUMBER OF SPECIES PER PLOT	39.9		35		28		19		36		62		35		64	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
73 VIOL CAN	14.3	0.3							2	2						
74 DISP TRA	14.3	0.1							1	2						
75 EQUI SCI	14.3	0.1			1	2										
76 GEOC LIV	14.3	0.1											1	2		
77 LYCO ANN	14.3	0.1	1	2												
78 MONE UNI	14.3	0.1			1	2										
79 OSMO DEP	14.3	0.1					1	2								
80 VACC CAE	14.3	0.1											1	2		
G LAYER																
81 CALA CAN	28.6	0.5							3	2					.5	3
82 CALA STR	28.6	0.4	1	2									2	2		
83 ELYM INN	14.3	0.7									5	3				
D LAYER																
84 PTIL CRI	85.7	11.9	44	2	10	2	2	2			.5	3	2	2	25	3
85 PLEU SCH	85.7	9.0	27	2	22	2	1	2			.5	3	12	2	.5	3
86 HYLO SPL	71.4	27.9	25	2	65	2	91	2					9	2	5	3
87 PLAG DRU	28.6	1.1							7	2					.5	3
88 BRAC SAL	28.6	0.2											1	2	.5	3
89 JAME AUT	28.6	0.1									.5	3			.5	3
90 PTIL PUL	28.6	0.1									.5	3			.5	3
91 BRAC STA	14.3	1.1							8	2						
92 AULA PAL	14.3	0.1			1	2										
93 DICR FLA	14.3	0.1									.5	3				
94 DICR FRA	14.3	0.1			1	2										
95 DICR FUS	14.3	0.1									.5	3				
96 EURH PUL	14.3	0.1													.5	3
97 LEPI REP	14.3	0.1									.5	3				
98 LEPT PYR	14.3	0.1			1	2										
99 PLAG CUS	14.3	0.1													.5	3
100 PLAG MED	14.3	0.1	1	2												
101 POHL NUT	14.3	0.1									.5	3				
102 PYLA POL	14.3	0.1													.5	3
103 RHYT TRI	14.3	0.1									.5	3				
104 TETR ANG	14.3	0.1											1	2		
105 TETR MNI	14.3	0.1											1	2		
L LAYER																
106 CLAD CHL	28.6	0.1									.5	3			.5	3
107 CLAD CON	28.6	0.1									.5	3			.5	3
108 NEPH BEL	28.6	0.1									.5	3			.5	3
109 CLAD COI	14.3	0.1													.5	3
110 HYPO TUB	14.3	0.1									.5	3				
111 LOBA PUL	14.3	0.1													.5	3
112 NEPH PAR	14.3	0.1									.5	3				
113 PELT POL	14.3	0.1									.5	3				
114 PHYS ADS	14.3	0.1													.5	3
115 USNE CAV	14.3	0.1									.5	3				
USNE SOR	14.3	0.1									.5	3				

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 16

TITLE : BF 3 PICEA GLAUCA/VIBURNUM EDULE/RUBUS PUBESCENS

		3G	3G	3G	20	GP	3G	GP
PLOT NUMBER	MEAN	P104	P142	P217	8645	4120	P097	4123
TOWNSHIP & RANGE		65 4	6611	6611	63 4	64 1	66 9	62 4
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 10	83L 12	83L 12	83L 7	83 L 10	83L 11	83L 8
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	901.4	880	900	900	870	940	975	845
SLOPE(%)	7.4	4	3	3	11	14	7	10
ASPECT(DEG)		330	32	4	90	180	50	320
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		SHG	HG	HG	SHG	M	M	M
NUTRIENT REGIME		M	PM	PM		PM	SM	PM
OVERLYING MATERIAL		Mb1	Fv	GFb	M		Mb	M
UNDERLYING MATERIAL		R	M1	Mm			Ru	
EROSION/DEPOSITION								
SOIL SUBGROUP		GLBR	O	O		O	O	O
SOIL GREAT GROUP		GL	LG	G		GL	GL	GL
SOIL DRAINAGE		MW	I	I	W	W	W	MW
SOLUM THICKNESS(CM)	46.2	30	56	18		73	35	65
TYPE & DEPTH TO RESTRICT(CM)		B150	W 50	B150				
THICKNESS LFH(CM)	10.8	9	16	7		11	9	13
pH-LFH	6.1							6.1
-A	5.7	4.0	8.0	7.0		5.6	4.0	5.8
-B	6.2	5.0	8.0	7.0		6.1	5.0	5.9
-C	6.1	7.0		7.0		6.3	4.0	
TEXTURE-A/1		SIL	SIL	S		SIL	SI	L
-B/2		SICL	SCL	LS		SL	SICL	CL
-C/3		CL	SCL	S		CL	SICL	
COARSE FRAGMENTS-B(%)	12.8		20	5			25	1
SEEPAGE(*) & MOTTLING(CM)		30	* 7					
ROOTING DEPTH(CM)	33.5					30		37
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)	109.4	80	87			166	104	110
CANOPY HEIGHT(M)	25.2	26	24	28		22	25	26
MEAN ANNUAL INCREMENT	0.0							
STRATA COVERAGE(%)-A	49.3	50	50	55	50	50	40	50
-B	42.1	45	15	10	70	60	40	55
-C	54.1	25	30	40	50	95	45	94
-G	1.6	1	0	0	3	5	1	1
-D	61.0	99	99	99	15	50	25	40
-L	2.9	0	0	0	0	10	0	10
SURFACE SUBST(%)-DEAD WOOD	10.3	0	5	5	17	35	5	5
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0
-ORGANIC	75.4	0	95	95	83	65	95	95
-OPEN WATER	0.0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0							
-GRAMINOIDS	0.0							
-BROWSE	0.0							

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	4	

PINUS CONTORTA/LEDUM GROENLANDICUM/CLADONIA SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 17 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P179		3G P117		3G P118		3G P153		GP 4128		3B F064	
NUMBER OF SPECIES PER PLOT	29.5		23		30		19		29		39		37	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 PINU CON	100.0	35.0	20	2	5	2	60	2	40	2	35	3	50	2
2 PICE MAR	16.7	0.2							1	2				
A2 LAYER														
PINU CON	100.0	5.9	5	2	15	2	5	2	5	2	.5	3	5	2
PICE MAR	50.0	2.5	5	2	5	2	5	2						
3 SALI BEB	16.7	0.2					1	2						
4 SALI SPP	16.7	0.2							1	2				
E LAYER														
5 CETR HAL	33.3	0.9									.5	3	5	2
6 CETR PIN	33.3	0.9									.5	3	5	2
7 HYPO PHY	33.3	0.9									.5	3	5	2
8 PARM AMB	33.3	0.9									.5	3	5	2
9 PARM HYP	33.3	0.9									.5	3	5	2
10 USNE SOR	33.3	0.9									.5	3	5	2
11 BRYO FUS	33.3	0.4									.5	3	2	2
12 BRYO FRE	16.7	0.5											3	2
13 PLAT GLA	16.7	0.1									.5	3		
14 USNE SUB	16.7	0.1									.5	3		
B1 LAYER														
15 ALNU CRI	16.7	0.8							5	2				
16 SALI SCO	16.7	0.3							2	2				
17 ABIE LAS	16.7	0.2											1	2
PICE MAR	16.7	0.2					1	2						
B2 LAYER														
18 LEDU GRO	83.3	15.0	4	2	11	2			30	2	10	3	35	2
19 VACC MYR	83.3	3.5	10	2	1	2			1	2	5	3	4	2
20 ROSA ACI	66.7	1.5	1	2					1	2	5	3	2	2
PICE MAR	33.3	0.8			3	2	2	2						
21 SPIR BET	33.3	0.5	1	2					2	2				
22 BETU GLA	16.7	2.2			13	2								
SALI BEB	16.7	1.2			7	2								
23 SHEP CAN	16.7	1.0	6	2										
24 VACC MEM	16.7	0.5							3	2				
ABIE LAS	16.7	0.2											1	2
ALNU CRI	16.7	0.2											1	2
25 LONI INV	16.7	0.2							1	2				
26 MENZ FER	16.7	0.2											1	2
27 PICE GLA	16.7	0.2	1	2										
PINU CON	16.7	0.2			1	2								
28 VACC CAE	16.7	0.2							1	2				
29 VACC VIT	16.7	0.2			1	2								
30 POPU TRE	16.7	0.1									.5	3		
C LAYER														
31 CORN CAN	83.3	6.0	1	2	2	2			8	2	5	3	20	2
32 LINN BOR	83.3	4.5	2	2			2	2	3	2	10	3	10	2
VACC VIT	83.3	4.5	3	2	5	2			1	2	10	3	8	2
33 ORTH SEC	66.7	0.8					1	2	2	2	.5	3	1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	4	

PINUS CONTORTA/LEDUM GROENLANDICUM/CLADONIA SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	AVERAGE VALUE		3G		3G		3G		3G		GP		3B	
PLOT NUMBER			P179		P117		P118		P153		4128		F064	
NUMBER OF SPECIES PER PLOT	29.5		23		30		19		29		39		37	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
34 MAIA CAN	50.0	4.3							1	2	15	3	10	2
VACC CAE	33.3	1.7	9	2									1	2
35 LYCO ANN	33.3	1.3							7	2	.5	3		
36 PETA PAL	33.3	0.8			1	2			4	2				
37 PYRO CHL	33.3	0.5					2	2					1	2
38 EPIL ANG	33.3	0.3			1	2					.5	3		
39 GAUL HIS	16.7	0.5											3	2
40 ANTE MIC	16.7	0.2			1	2								
41 ARNI COR	16.7	0.2							1	2				
42 ASTE CIL	16.7	0.2			1	2								
43 EQUI PRA	16.7	0.2			1	2								
44 GEOC LIV	16.7	0.2	1	2										
45 LYCO CLA	16.7	0.2											1	2
46 PYRO ASA	16.7	0.2							1	2				
G LAYER														
47 ELYM INN	50.0	0.7	1	2	1	2							2	2
ASTE CIL	16.7	0.2			1	2								
48 CALA STR	16.7	0.2			1	2								
49 CALA CAN	16.7	0.1									.5	3		
D LAYER														
50 PLEU SCH	83.3	33.3	1	2			90	2	29	2	10	3	70	2
51 PTIL CRI	66.7	5.0					1	2	4	2	10	3	15	2
52 HYLO SPL	66.7	4.0					5	2	4	2	10	3	5	2
53 DICR POL	33.3	0.3					1	2	1	2				
54 POLY JUN	33.3	0.3			1	2							1	2
55 TETR MNI	16.7	0.5			3	2								
56 BRAC STA	16.7	0.2							1	2				
57 DICR SCO	16.7	0.2											1	2
58 SPLA SPH	16.7	0.2			1	2								
59 DICR ACU	16.7	0.1									.5	3		
60 DICR FUS	16.7	0.1									.5	3		
61 PTIL PUL	16.7	0.1									.5	3		
L LAYER														
62 CLAD MIT	83.3	10.1	1	2	55	2	3	2			.5	3	1	2
63 STER TOM	66.7	1.0	1	2	1	2	3	2					1	2
64 CLAD GRA	66.7	0.6	1	2	1	2	1	2			.5	3		
65 PELT APH	50.0	1.0			1	2	3	2					2	2
66 PELT CAN	50.0	0.5	1	2			1	2	1	2				
67 PELT MAL	33.3	0.5			2	2							1	2
68 CLAD PHY	33.3	0.4			2	2					.5	3		
69 CLAD COR	33.3	0.3					1	2	1	2				
70 CLAD GON	33.3	0.3	1	2							.5	3		
71 CETR ARE	16.7	0.2	1	2										
72 CLAD ECM	16.7	0.2			1	2								
73 CLAD RAN	16.7	0.2	1	2										
74 CLAD STE	16.7	0.2											1	2
75 CETR ERI	16.7	0.1									.5	3		
	16.7	0.1									.5	3		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	4	

PINUS CONTORTA/LEDUM GROENLANDICUM/CLADONIA SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G P179		3G P117		3G P118		3G P153		GP 4128		3B F064	
NUMBER OF SPECIES PER PLOT	29.5		23		30		19		29		39		37	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
77 CLAD COC	16.7	0.1									.5	3		
78 CLAD COI	16.7	0.1									.5	3		
79 CLAD CON	16.7	0.1									.5	3		
80 CLAD PLE	16.7	0.1									.5	3		

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : BF 4 PINUS CONTORTA/LEDUM GROENLANDICUM/CLADONIA SPP

		3G	3G	3G	3G	GP	3B
PLOT NUMBER	MEAN	P179	P117	P118	P153	4128	F064
TOWNSHIP & RANGE		6513	6710	6813	6612	63 3	59 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 12	83L 14	83L 13	83L 12	83L 8	83L 2
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	948.3	950	920	905	995	920	1000
SLOPE(%)	3.2	0	0	2	8	3	6
ASPECT(DEG)				318	288	172	324
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		SM	SX	SM	SM	SX	SM
NUTRIENT REGIME		M	SM	SM	SM	SM	SM
OVERLYING MATERIAL		GFt		GFk	Ml	E	Frt
UNDERLYING MATERIAL		M	GFk				
EROSION/DEPOSITION		V					
SOIL SUBGROUP		O	E	BR	BR	E	E
SOIL GREAT GROUP		GL	EB	GL	GL	DYB	DYB
SOIL DRAINAGE		W	W	W	W	R	W
SOLUM THICKNESS(CM)	42.3	43	33	34	35	68	41
TYPE & DEPTH TO RESTRICT(CM)		B200					
THICKNESS LFH(CM)	4.8	3	6	5	5	4	6
pH-LFH	3.8					3.8	
-A	4.8	5.0	6.0	5.0	4.0		4.0
-B	5.5	6.0	6.0	6.0	5.0	4.8	5.0
-C	6.7	8.0	7.0	6.0	8.0	5.3	6.0
TEXTURE-A/1		Si	LS	SL	Si	S	S
-B/2		SiCL	L	CL	CL	S	S
-C/3		SiCL	SiCL	CL	SiCL	S	S
COARSE FRAGMENTS-B(%)	55.0				55		
SEEPAGE(*) & MOTTLING(CM)							
ROOTING DEPTH(CM)	44.5					57	32
VEGETATION :							
ASSOCIATION							
STAND AGE(YR)	71.3	84		71	71	59	
CANOPY HEIGHT(M)	18.0	22	14	16	21	15	20
MEAN ANNUAL INCREMENT	0.0						
STRATA COVERAGE(%)-A	40.8	30	20	60	45	35	55
-B	24.7	20	30	3	40	15	40
-C	20.0	15	1	5	20	44	35
-G	1.0	1	2	0	0	1	2
-D	42.8	1	10	96	35	30	85
-L	14.8	5	65	3	1	10	5
SURFACE SUBST(%)-DEAD WOOD	3.8	0	0	10	2	1	10
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0
-ORGANIC	79.5	100	0	90	98	99	90
-OPEN WATER	0.0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		20 8639		20 5752		3G P180		3G P126		3G P127		GP 4124		3G P141		3G P048		20 4588		3G P095		3G P139		20 8641		20 8518		20 8517		20 8543	
NUMBER OF SPECIES PER PLOT	26.8		20		25		25		19		20		50		27		38		36		29		29		22		20		22		28	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																																
1 PINU CON	93.8	18.2	25	2	15	2	25	2	25	2	10	2	25	3	35	2	40	2	55	2	2	2	10	2	10	2	2	2	5	2	7	2
2 PICE MAR	62.5	15.3					7	2	1	2	1	2									25	2	1	2	22	2	55	2	40	2	40	2
3 POPU TRE	25.0	2.2	2	2													20	2			5	2									8	2
4 PICE GLA	18.8	1.0					5	2									1	2			10	2										
A2 LAYER																																
PICE MAR	81.3	9.4	10	2	20	2	5	2	15	2	20	2							5	2	10	2	20	2	3	2	5	2	15	2	15	2
PINU CON	56.3	2.9			5	2	5	2	10	2	10	2	5	3	5	2	1	2	5	2			1	2								
PICE GLA	25.0	0.3					1	2					.5	3			2	2			1	2										
POPU TRE	12.5	0.4															5	2			1	2										
5 ABIE BAL	6.3	0.1																			2	2										
6 POPU BAL	6.3	0.1																					1	2								
7 SALI SPP	6.3	0.1													1	2																
E LAYER																																
8 BRYO FUS	6.3	0.0											.5	3																		
9 HYPO PHY	6.3	0.0											.5	3																		
10 PARM ALE	6.3	0.0											.5	3																		
11 PARM HYP	6.3	0.0											.5	3																		
12 PARM SUL	6.3	0.0											.5	3																		
13 USNE ALP	6.3	0.0											.5	3																		
14 USNE SCA	6.3	0.0											.5	3																		
B1 LAYER																																
PICE MAR	56.3	2.3	1	2	5	2			2	2	3	2											3	2			4	2	15	2	3	2
15 ALNU CRI	25.0	1.6	1	2											10	2	5	2	10	2												
16 ABIE LAS	12.5	0.2											.5	3											3	2						
PINU CON	12.5	0.1			1	2					1	2																				
PICE GLA	6.3	0.6											10	3																		
POPU TRE	6.3	0.1													1	2																
17 SALI SCO	6.3	0.1													1	2																
SALI SPP	6.3	0.1															1	2														
B2 LAYER																																
18 ROSA ACI	87.5	3.1	5	2	5	2	3	2			1	2			1	2	2	2	5	2	1	2	2	2	5	2	5	2	7	2	5	2
19 LEDU GRO	81.3	20.6	38	2	40	2	10	2	1	2	40	2	35	3			8	2	30	2	2	2			50	2	45	2	5	2		
20 VACC MYR	75.0	4.4	4	2	6	2			1	2	7	2	5	3			11	2	15	2	6	2			6	2	6	2	1	2		
21 SPIR BET	43.8	1.3	3	2									5	3	1	2	1	2			5	2			3	2					3	2
PICE MAR	43.8	1.1	1	2	4	2	1	2			4	2													1	2			6	2		
22 VIBU EDU	37.5	1.7													2	2	3	2	3	2	3	2							1	2	15	2
23 LONI INV	31.3	1.6					8	2													2	2	5	2			4	2	6	2		
ALNU CRI	25.0	3.5											.5	3	10	2	40	2	5	2												
24 VACC MEM	25.0	1.8	2	2											22	2			1	2					4	2						
ABIE LAS	18.8	0.5											5	3	1	2									2	2						
SALI SCO	18.8	0.2					1	2							1	2			1	2												
25 SORB SCO	12.5	0.7											.5	3											10	2						
PICE GLA	12.5	0.4											5	3							1	2										
POPU TRE	12.5	0.1																	1	2											1	2
26 SHEP CAN	6.3	0.5																	8	2												
ABIE BAL	6.3	0.4																			6	2										
27 SALI BEB	6.3	0.4			6	2																										

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		20 8639		20 5752		3G P180		3G P126		3G P127		GP 4124		3G P141		3G P048		20 4588		3G P095		3G P139		20 8641		20 8518		20 8517		20 8543	
NUMBER OF SPECIES PER PLOT	26.8		20		25		25		19		20		50		27		38		36		29		29		22		20		22		28	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
28 RIBE OXY	6.3	0.3					5	2																								
PINU CON	6.3	0.1															1	2														
29 SALI GLA	6.3	0.1											1	3																		
30 AMEL ALN	6.3	0.0											.5	3																		
31 OPLO HOR	6.3	0.0											.5	3																		
POPU BAL	6.3	0.0											.5	3																		
C LAYER																																
32 CORN CAN	100.0	5.9	8	2	2	2	6	2	1	2	3	2	10	3	7	2	4	2	9	2	6	2	10	2	10	2	2	2	10	2	4	2
33 LINN BOR	81.3	2.6	6	2	2	2	4	2			1	2	5	3	1	2	3	2	6	2	1	2	5	2	1	2			5	2	2	2
34 VACC VIT	62.5	4.1	3	2	6	2					2	2	25	3			5	2	14	2							3	2	2	2	1	2
35 PETA PAL	56.3	0.7	1	2	1	2							.5	3	1	2	2	2	1	2			1	2					3	2	1	2
36 EPIL ANG	43.8	1.1											5	3	3	2	4	2	2	2			1	2	2	2					1	2
37 PYRO ASA	37.5	0.6					1	2							1	2	1	2	5	2	1	2	1	2								
38 RUBU PUB	31.3	0.6					2	2					5	3	1	2	1	2			1	2										
39 VACC CAE	31.3	0.6					1	2									5	2	2	2			1	2			1	2				
40 EQUI SYL	31.3	0.3					1	2									1	2			1	2			1	2						
41 MAIA CAN	25.0	0.6													2	2			1	2	2	2									4	2
42 ARNI COR	25.0	0.5															3	2	1	2									2	2	2	2
43 LATH OCH	25.0	0.3															1	2					1	2					1	2	1	2
44 MERT PAN	25.0	0.3											.5	3			1	2					3	2							1	2
45 GAUL HIS	18.8	0.4	2	2							1	2																				
46 FRAG VIR	18.8	0.3															1	2	1	2			2	2								
47 MITE NUD	18.8	0.2															1	2					1	2							1	2
48 VIOL REN	18.8	0.2															1	2	1	2			1	2								
49 GYMN DRY	12.5	0.6											.5	3	9	2																
50 RUBU PED	12.5	0.5											5	3											3	2						
51 ASTE CON	12.5	0.2	2	2																											1	2
52 EQUI PRA	12.5	0.1											.5	3							1	2										
53 EQUI SCI	12.5	0.1					1	2																							1	2
54 GALI BOR	12.5	0.1															1	2					1	2								
55 LYCO ANN	6.3	0.3											5	3																		
56 OXYC MIC	6.3	0.3																			4	2										
57 GEOC LIV	6.3	0.2			3	2																										
58 SMIL RAC	6.3	0.2											3	3																		
59 STRE AMP	6.3	0.2											3	3																		
60 ASTE CIL	6.3	0.1																					1	2								
61 CAST MIN	6.3	0.1																					1	2								
62 ORTH SEC	6.3	0.1															1	2														
63 HERA LAN	6.3	0.0											.5	3																		
G LAYER																																
64 ELYM INN	43.8	0.9			1	2	1	2									2	2	3	2			2	2					3	2	3	2
65 CALA STR	12.5	0.3													1	2	3	2														
66 CALA CAN	12.5	0.2			3	2							.5	3																		
67 CARE CAP	6.3	0.1																					1	2								
68 PELT APH	6.3	0.1															2	2														
D LAYER																																
69 PLEU SCH	100.0	35.1	11	2	60	2	48	2	73	2	65	2	15	3	37	2	15	2	60	2	36	2	7	2	16	2	30	2	38	2	15	2
70 HYLO SPL	100.0	27.5	43	2	20	2	25	2	1	2	2	2	5	3	19	2	46	2	10	2	20	2	85	2	22	2	30	2	48	2	24	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 18 PAGE 3

PLOT NUMBER	AVERAGE VALUE		20 8639		20 5752		3G P180		3G P126		3G P127		GP 4124		3G P141		3G P048		20 4588		3G P095		3G P139		20 8641		20 8518		20 8517		20 8543	
NUMBER OF SPECIES PER PLOT	26.8		20		25		25		19		20		50		27		38		36		29		29		22		20		22		28	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
71 PTIL CRI	100.0	18.6	45	2	1	2	17	2	3	2	32	2	20	3	22	2	20	2	19	2	26	2	1	2	32	2	26	2	11	2	3	2
72 DICR POL	50.0	0.6			1	2	3	2	1	2	1	2			1	2											1	2			1	2
73 DICR SCO	18.8	0.3																	1	2									1	2	2	2
74 POLY JUN	12.5	0.1																	1	2							1	2				
75 BARB LYC	6.3	0.1							1	2																						
76 BRAC HYL	6.3	0.1																	1	2												
77 BRAC SAL	6.3	0.1																			1	2										
78 DICR FLA	6.3	0.1																			2	2										
79 DICR FUS	6.3	0.1																	1	2												
80 POHL NUT	6.3	0.1							1	2																						
81 POLY COM	6.3	0.1									1	2																				
82 POLY PIL	6.3	0.1																	1	2												
83 PTIL CIL	6.3	0.1			1	2																										
84 PTIL PUL	6.3	0.0											.5	3																		
L LAYER																																
PELT APH	68.8	1.4			5	2	2	2	2	2			.5	3	1	2			2	2			2	2	3	2	3	2	1	2		
85 CLAD MIT	37.5	0.4			2	2			1	2	1	2							1	2											1	2
86 PELT MAL	31.3	0.5			3	2			1	2															1	2	1	2				
87 CLAD GRA	25.0	0.2							1	2			.5	3					1	2							1	2				
88 CLAD COR	18.8	0.2											.5	3									1	2			1	2				
89 STER TOM	6.3	0.1							1	2																						
90 CLAD CEN	6.3	0.0											.5	3																		
91 CLAD CHL	6.3	0.0											.5	3																		
92 CLAD COC	6.3	0.0											.5	3																		
93 CLAD CON	6.3	0.0											.5	3																		
94 CLAD PHY	6.3	0.0											.5	3																		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	20	
PLOT NUMBER	8551	
NUMBER OF SPECIES PER PLOT	18	
SPECIES	%C	SV
A1 LAYER	-----	
1 PINU CON		
2 PICE MAR	53	2
3 POPU TRE		
4 PICE GLA		
A2 LAYER	-----	
PICE MAR	7	2
PINU CON		
PICE GLA		
POPU TRE		
5 ABIE BAL		
6 POPU BAL		
7 SALI SPP		
E LAYER	-----	
8 BRYO FUS		
9 HYPO PHY		
10 PARM ALE		
11 PARM HYP		
12 PARM SUL		
13 USNE ALP		
14 USNE SCA		
B1 LAYER	-----	
PICE MAR	1	2
15 ALNU CRI		
16 ABIE LAS		
PINU CON		
PICE GLA		
POPU TRE		
17 SALI SCO		
SALI SPP		
B2 LAYER	-----	
18 ROSA ACI	2	2
19 LEDU GRO	25	2
20 VACC MYR	2	2
21 SPIR BET		
PICE MAR	1	2
22 VIBU EDU		
23 LONI INV		
ALNU CRI		
24 VACC MEM		
ABIE LAS		
SALI SCO		
25 SORB SCO		
PICE GLA		
POPU TRE		
26 SHEP CAN		
ABIE BAL		
27 SALI BEB		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 18 PAGE 5

	20	
PLOT NUMBER	8551	
NUMBER OF SPECIES PER PLOT	18	
SPECIES	%C	SV
28 RIBE OXY		
PINU CON		
29 SALI GLA		
30 AMEL ALN		
31 OPLO HOR		
POPU BAL		
C LAYER	-----	
32 CORN CAN	2	2
33 LINN BOR		
34 VACC VIT	5	2
35 PETA PAL		
36 EPIL ANG		
37 PYRO ASA		
38 RUBU PUB		
39 VACC CAE		
40 EQUI SYL	1	2
41 MAIA CAN		
42 ARNI COR		
43 LATH OCH		
44 MERT PAN		
45 GAUL HIS	3	2
46 FRAG VIR		
47 MITE NUD		
48 VIOL REN		
49 GYMN DRY		
50 RUBU PED		
51 ASTE CON		
52 EQUI PRA		
53 EQUI SCI		
54 GALI BOR		
55 LYCO ANN		
56 OXYC MIC		
57 GEOC LIV		
58 SMIL RAC		
59 STRE AMP		
60 ASTE CIL		
61 CAST MIN		
62 ORTH SEC		
63 HERA LAN		
G LAYER	-----	
64 ELYM INN		
65 CALA STR		
66 CALA CAN		
67 CARE CAP		
68 PELT APH		
D LAYER	-----	
69 PLEU SCH	36	2
70 HYLO SPL	40	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	5	

PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 18 PAGE 6

	20	
PLOT NUMBER	8551	
NUMBER OF SPECIES PER PLOT	10	
SPECIES	%C	SV
71 PTIL CRI	19	2
72 DICR POL	1	2
73 DICR SCO		
74 POLY JUN		
75 BARB LYC		
76 BRAC HYL		
77 BRAC SAL		
78 DICR FLA		
79 DICR FUS		
80 POHL NUT		
81 POLY COM		
82 POLY PIL		
83 PTIL CIL		
84 PTIL PUL		
L LAYER		
PELT APH	1	2
85 CLAD MIT	1	2
86 PELT MAL	2	2
87 CLAD GRA		
88 CLAD COR		
89 STER TOM		
90 CLAD CEN		
91 CLAD CHL		
92 CLAD COC		
93 CLAD CON		
94 CLAD PHY		

ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 18

TITLE : BF 5 PINUS CONTORTA-PICEA MARIANA/LEDUM GROENLANDICUM/PLEUROZIUM SCHR

		20	20	3G	3G	3G	GP	3G	3G	20	3G	3G	20	20	20	20	20
PLOT NUMBER	MEAN	8639	5752	P180	P126	P127	4124	P141	P048	4588	P095	P139	8641	8518	8517	8543	8551
TOWNSHIP & RANGE		63 6	63 8	6513	6713	6713	62 3	6612	65 8	63 8	64 4	6513	63 6	63 6	63 6	63 7	63 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L	63L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L
		7	6	12	13	13	8	12	11	6	10	12	7	7	7	7	7
PHYSIOGRAPHIC SUBREGION																	
GEOMORPHIC SYSTEM																	
ECOSECTION																	
ELEVATION(MASL)	973.1	950	1010	1015	910	955	825	1020	960	1030	905	1050	1060	920	930	1020	1010
SLOPE(%)	4.5	2	10	8	0	2	3	0	12	13	0	5	6	4	2	4	1
ASPECT(DEG)		38	354	296		8	260		282	300		292	335	345	330	240	260
ENVIRONMENT/SOILS :																	
ECOLOGICAL MOISTURE REGIME		SHG	M	M	SHG	M	M	HG	M	SHG	M	SHG	M	M	M	M	M
NUTRIENT REGIME				M	SM	SM	M	M	SM		M	SM					
OVERLYING MATERIAL		M	M	Mu	Mm	GFv	M	Mm	Mi	MC	Mv	Fv	M	QF	M	M	MQ
UNDERLYING MATERIAL						MI					Rm	MI					
EROSION/DEPOSITION																	
SOIL SUBGROUP				BR	GLBR	BR	BR	O	BR		BR	GLBR					
SOIL GREAT GROUP		M	M	GL	GL	GL	GL	LG	GL		GL	GL					
SOIL DRAINAGE		W	W	W	MW	MW	MW	I	W	I	W	I	W	W	W	W	W
SOLUM THICKNESS(CM)	41.0			39	34	33	69	41	32		31	49					
TYPE & DEPTH TO RESTRICT(CM)								W 50				W 50					
THICKNESS LFH(CM)	7.8			10	4	6	10	10	6		7	9					
pH-LFH	3.7						3.7										
-A	4.6			4.0	5.0	4.0	3.5	6.0	4.0		4.0	6.0					
-B	5.4			5.0	6.0	5.0	4.3	6.0	5.0		5.0	7.0					
-C	6.4			6.0	8.0	6.0	5.6	5.0	5.0		8.0	8.0					
TEXTURE-A/1				LS	SI	S	SL	SIL	SI		SIL	SL					
-B/2				SICL	SICL	SCL	SIL	SCL	CL		SICL	SICL					
-C/3				SIC	SICL	SCL	CL	CL	CL		SICL	SICL					
COARSE FRAGMENTS-B(%)	25.0			30	25	30		25			25	15					
SEEPAGE(*) & MOTTLING(CM)					*			* 11				20					
ROOTING DEPTH(CM)	53.0						53										
VEGETATION :																	
ASSOCIATION																	
STAND AGE(YR)	93.8		118	94	81	68	130		85	71		103					
CANOPY HEIGHT(M)	21.5			26	20	17	20	20	25		24	16	24		22	22	
MEAN ANNUAL INCREMENT	0.0																
STRATA COVERAGE(%)-A	48.1	35	40	45	50	40	30	35	65	70	45	30	35	60	60	70	60
-B	39.6	45	60	30	3	55	65	40	55	60	15	10	65	50	35	20	25
-C	22.9	25	25	15	1	5	69	25	35	40	10	25	25	7	20	20	20
-G	1.4	0	3	2	0	0	1	1	5	3	0	2	0	0	3	3	0
-D	85.6	95	85	90	95	99	50	95	90	91	90	95	70	84	95	60	86
-L	3.0	0	10	2	5	0	10	0	0	4	0	1	4	6	1	1	4
SURFACE SUBST(%)-DEAD WOOD	3.6	7	2	2	5	1	5	1	2	3	0	1	15	2	2	5	5
-BEDROCK	0.4	0	0	0	0	1	0	5	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	96.1	93	98	98	95	99	95	95	98	97	99	99	85	98	98	95	95
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0																
-GRAMINOIDS	0.0																
-BROWSE	0.0																

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	6	

PICEA MARIANA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	AVERAGE VALUE		20 8551		20 5754		3G P042	
NUMBER OF SPECIES PER PLOT	26.0		18		27		33	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
A1 LAYER								
1 PICE MAR	100.0	44.3	53	2	35	2	45	2
A2 LAYER								
PICE MAR	100.0	5.7	7	2	5	2	5	2
2 PINU CON	33.3	0.3					1	2
B1 LAYER								
PICE MAR	66.7	1.0	1	2	2	2		
B2 LAYER								
3 LEDU GRO	100.0	27.0	25	2	55	2	1	2
4 LONI INV	66.7	2.7			5	2	3	2
PICE MAR	66.7	1.3	1	2	3	2		
5 ROSA ACI	66.7	1.0	2	2			1	2
6 SALI MYR	33.3	0.7			2	2		
7 VACC MYR	33.3	0.7	2	2				
8 RIBE AME	33.3	0.3					1	2
9 SALI GLA	33.3	0.3					1	2
C LAYER								
10 EQUI SYL	66.7	3.0	1	2	8	2		
11 PETA PAL	66.7	1.7			4	2	1	2
12 CORN CAN	66.7	1.3	2	2			2	2
13 EQUI SCI	66.7	1.0			1	2	2	2
14 MITE NUD	66.7	1.0			1	2	2	2
15 VACC VIT	33.3	1.7	5	2				
16 EQUI ARV	33.3	1.0					3	2
17 GAUL HIS	33.3	1.0	3	2				
18 RUBU PUB	33.3	1.0					3	2
19 OXYC MIC	33.3	0.7			2	2		
20 SMIL TRI	33.3	0.7			2	2		
21 ACHI MIL	33.3	0.3			1	2		
22 ASTE CIL	33.3	0.3			1	2		
23 ASTE CON	33.3	0.3					1	2
24 DISP TRA	33.3	0.3					1	2
25 GALI BOR	33.3	0.3			1	2		
26 GALI TRI	33.3	0.3					1	2
27 GEUM RIV	33.3	0.3					1	2
28 LINN BOR	33.3	0.3					1	2
29 MERT PAN	33.3	0.3					1	2
G LAYER								
30 CARE VAG	66.7	4.7			10	2	4	2
31 CARE DIS	33.3	5.0					15	2
32 CARE PAU	33.3	0.3					1	2
D LAYER								
33 HYLO SPL	100.0	35.7	40	2	45	2	22	2
34 PLEU SCH	100.0	20.0	36	2	18	2	6	2
35 PTIL CRI	100.0	12.0	19	2	14	2	3	2
36 AULA PAL	66.7	5.0			14	2	1	2
37 SPHA WAR	66.7	0.7			1	2	1	2
38 RHIZ PSE	33.3	1.7					5	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	6	

PICEA MARIANA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 19 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8551		20 5754		3G P042	
NUMBER OF SPECIES PER PLOT	26.0		18		27		33	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
39 TOME NIT	33.3	0.7					2	2
40 DICR POL	33.3	0.3	1	2				
41 DICR SCO	33.3	0.3			1	2		
42 POHL NUT	33.3	0.3					1	2
43 POLY JUN	33.3	0.3			1	2		
L LAYER								
44 CLAD MIT	100.0	1.0	1	2	1	2	1	2
45 PELT APH	66.7	1.0	1	2	2	2		
46 PELT MAL	66.7	1.0	2	2	1	2		
47 CLAD ECM	33.3	0.3					1	2

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : BF 6 PICEA MARIANA/HYLOCOMIUM SPLENDENS TABLE 19

		20	20	3G
PLOT NUMBER	MEAN	8551	5754	P042
TOWNSHIP & RANGE		63 5	63 8	65 7
MERIDIAN		W 6	W 6	W 6
MAPSHEET		83L	83L	83L
		7	6	10
PHYSIOGRAPHIC SUBREGION				
GEOMORPHIC SYSTEM				
ECOSECTION				
ELEVATION(MASL)	988.3	1010	990	965
SLOPE(%)	0.3	1	0	0
ASPECT(DEG)		260		
ENVIRONMENT/SOILS :				
ECOLOGICAL MOISTURE REGIME		M	HG	SHD
NUTRIENT REGIME				SM
OVERLYING MATERIAL		MQ	L	Oo
UNDERLYING MATERIAL				
EROSION/DEPOSITION				
SOIL SUBGROUP				T
SOIL GREAT GROUP				M
SOIL DRAINAGE		W	P	VP
SOLUM THICKNESS(CM)	0.0			
TYPE & DEPTH TO RESTRICT(CM)				
THICKNESS LFH(CM)	0.0			
pH-LFH	0.0			
-A	0.0			
-B	0.0			
-C	0.0			
TEXTURE-A/1				m
-B/2				
-C/3				
COARSE FRAGMENTS-B(%)	0.0			
SEEPAGE(*) & MOTTLING(CM)				
ROOTING DEPTH(CM)	0.0			
VEGETATION :				
ASSOCIATION				
STAND AGE(YR)	79.5		73	86
CANOPY HEIGHT(M)	11.0			11
MEAN ANNUAL INCREMENT	0.0			
STRATA COVERAGE(%)-A	50.0	60	40	50
-B	30.0	25	60	5
-C	21.7	20	20	25
-G	9.0	0	7	20
-D	72.3	86	91	40
-L	3.0	4	4	1
SURFACE SUBST(%)-DEAD WOOD	2.3	5	1	1
-BEDROCK	0.0	0	0	0
-STONES	0.0	0	0	0
-MIN.SOIL	0.0	0	0	0
-ORGANIC	96.3	95	98	96
-OPEN WATER	1.3	0	1	3
BIOMASS(KG/HA)-FORBS	0.0			
-GRAMINOIDS	0.0			
-BROWSE	0.0			

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	7	

LARIX LARICINA-PICEA MARIANA/BETULA GLANDULOSA/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 20 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P061		20 5755	
NUMBER OF SPECIES PER PLOT	23.5		19		28	
SPECIES	%P	MC	%C	SV	%C	SV
A1 LAYER						
1 LARI LAR	100.0	3.0	1	2	5	2
A2 LAYER						
LARI LAR	50.0	1.0			2	2
B1 LAYER						
LARI LAR	100.0	2.0	1	2	3	2
B2 LAYER						
2 BETU GLA	100.0	40.0	25	2	55	2
LARI LAR	100.0	15.0	22	2	8	2
3 SALI CAN	100.0	2.5	3	2	2	2
4 LEDU GRO	50.0	0.5	1	2		
5 SALI MYR	50.0	0.5	1	2		
C LAYER						
6 SMIL TRI	100.0	6.0	4	2	8	2
7 OXYC MIC	100.0	2.5	1	2	4	2
8 EQUI ARV	50.0	0.5	1	2		
9 EQUI SCI	50.0	0.5			1	2
10 GALI BOR	50.0	0.5			1	2
11 GALI LAB	50.0	0.5	1	2		
12 MITE NUD	50.0	0.5			1	2
13 PEDI LAB	50.0	0.5	1	2		
14 POLY VIV	50.0	0.5			1	2
15 STEL LOG	50.0	0.5			1	2
16 STEL LON	50.0	0.5	1	2		
17 VACC VIT	50.0	0.5			1	2
G LAYER						
18 CARE GYN	100.0	3.0	2	2	4	2
19 CARE AQU	50.0	5.0			10	2
20 CARE DIA	50.0	1.5	3	2		
21 CALA CAN	50.0	0.5			1	2
D LAYER						
22 AULA PAL	100.0	9.0	4	2	14	2
23 TOME NIT	100.0	1.5	1	2	2	2
24 SPHA ANG	50.0	47.5	95	2		
25 SPHA WAR	50.0	26.0			52	2
26 DICR POL	50.0	2.0			4	2
27 HYPN PRA	50.0	2.0			4	2
28 POHL NUT	50.0	1.0			2	2
29 POLY JUN	50.0	1.0			2	2
30 CAMP STE	50.0	0.5			1	2
31 PALU SQU	50.0	0.5			1	2
32 PLAG ELL	50.0	0.5			1	2
33 POLY STR	50.0	0.5	1	2		
L LAYER						
34 CLAD CHL	50.0	1.0			2	2

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : BF 7 LARIX LARICINA-PICEA MARIANA/BETULA GLANDULOSA/SPHAGNUM SPP TABLE 20

		3G	20
PLOT NUMBER	MEAN	P061	5755
TOWNSHIP & RANGE		64 8	63 8
MERIDIAN		W 6	W 6
MAPSHEET		83L 11	83L 6
PHYSIOGRAPHIC SUBREGION			
GEOMORPHIC SYSTEM			
ECOSECTION			
ELEVATION(MASL)	1025.0	1065	985
SLOPE(%)	0.0	0	0
ASPECT(DEG)			
ENVIRONMENT/SOILS :			
ECOLOGICAL MOISTURE REGIME		HD	HD
NUTRIENT REGIME		PM	
OVERLYING MATERIAL		No	
UNDERLYING MATERIAL			
EROSION/DEPOSITION			
SOIL SUBGROUP		HY	
SOIL GREAT GROUP		M	
SOIL DRAINAGE		VP	VP
SOLUM THICKNESS(CM)	0.0		
TYPE & DEPTH TO RESTRICT(CM)			
THICKNESS LFH(CM)	0.0		
pH-LFH	0.0		
-A	0.0		
-B	0.0		
-C	8.0	8.0	
TEXTURE-A/1			
-B/2			
-C/3			
COARSE FRAGMENTS-B(%)	0.0		
SEEPAGE(*) & MOTTLING(CM)		*	
ROOTING DEPTH(CM)	0.0		
VEGETATION :			
ASSOCIATION			
STAND AGE(YR)	107.0		107
CANOPY HEIGHT(M)	11.0	11	
MEAN ANNUAL INCREMENT	0.0		
STRATA COVERAGE(%)-A	5.5	1	10
-B	60.0	50	70
-C	15.0	10	20
-G	12.5	5	20
-D	86.0	99	73
-L	1.0	0	2
SURFACE SUBST(%)-DEAD WOOD	0.5	0	1
-BEDROCK	0.0	0	0
-STONES	0.0	0	0
-MIN.SOIL	0.0	0	0
-ORGANIC	98.0	99	97
-OPEN WATER	1.0	1	1
BIOMASS(KG/HA)-FORBS	0.0		
-GRAMINOIDS	0.0		
-BROWSE	0.0		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	8	

PICEA GLAUCA/EQUISETUM SPP

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 21 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P32B		3G P176		3G P156		3G 169A		20 8644		3G PO13		20 7497	
NUMBER OF SPECIES PER PLOT	31.6		34		31		34		27		31		34		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 PICE GLA	100.0	27.9	45	2	30	2	30	2	15	2	30	2	15	2	30	2
2 POPU BAL	42.9	2.4			2	2					5	2	10	2		
3 PICE MAR	28.6	2.1			5	2			10	2						
4 ABIE LAS	14.3	0.7	5	2												
5 POPU TRE	14.3	0.6									4	2				
6 PINU CON	14.3	0.4			3	2										
A2 LAYER																
PICE GLA	100.0	6.4	10	2	5	2	5	2	5	2	10	2	5	2	5	2
PICE MAR	42.9	3.6			5	2			10	2					10	2
POPU BAL	42.9	2.7					1	2			15	2	3	2		
ABIE LAS	28.6	2.1	10	2			5	2								
7 ALNU TEN	28.6	0.3	1	2			1	2								
PINU CON	14.3	0.1			1	2										
POPU TRE	14.3	0.1									1	2				
B1 LAYER																
ALNU TEN	42.9	1.3	5	2	2	2	2	2								
PICE GLA	28.6	1.3									7	2	2	2		
POPU BAL	14.3	0.3											2	2		
8 SALI GLA	14.3	0.3											2	2		
ABIE LAS	14.3	0.1	1	2												
9 BETU PAP	14.3	0.1											1	2		
PICE MAR	14.3	0.1													1	1
10 SALI MEL	14.3	0.1											1	2		
B2 LAYER																
11 ROSA ACI	100.0	2.7	1	2	1	2	3	2	1	2	2	2	10	2	1	2
12 LONI INV	71.4	1.3	1	2	4	2	2	2	1	2			1	2		
13 VIBU EDU	42.9	2.4			5	2					10	2	2	2		
14 LEDU GRO	28.6	0.7					4	2	1	2						
15 RIBE LAC	28.6	0.6					1	2			3	2				
ABIE LAS	28.6	0.3	1	2			1	2								
16 SHEP CAN	14.3	2.1													15	2
17 CORN STO	14.3	1.9											13	2		
POPU BAL	14.3	0.9									6	2				
18 SALI DRU	14.3	0.3													2	2
19 LONI DIO	14.3	0.1											1	2		
PICE MAR	14.3	0.1													1	2
20 RIBE TRI	14.3	0.1			1	2										
21 RUBU CHA	14.3	0.1	1	2												
22 RUBU IDA	14.3	0.1											1	2		
23 SPIR BET	14.3	0.1											1	2		
24 VACC MYR	14.3	0.1					1	2								
C LAYER																
25 EQUI ARV	85.7	8.6	2	2	10	2			25	2	20	2	2	2	1	2
26 LINN BOR	85.7	3.4	3	2	1	2	7	2	1	2	1	2			11	2
27 RUBU PUB	85.7	2.7	2	2	4	2	3	2	2	2	6	2	2	2		
28 CORN CAN	71.4	2.4	2	2	2	2	9	2	1	2	3	2				
29 MERT PAN	71.4	2.4	1	2			3	2	2	2	6	2			5	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	8	

PICEA GLAUCA/EQUISETUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 21

PLOT NUMBER	AVERAGE VALUE		3G P32B		3G P176		3G P156		3G 169A		20 8644		3G P013		20 7497	
NUMBER OF SPECIES PER PLOT	31.6		34		31		34		27		31		34		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
30 MITE NUD	71.4	1.9	4	2	1	2	3	2	2	2	3	2				
31 PETA PAL	57.1	1.7			5	2	1	2					1	2	5	2
32 EQUI SCI	57.1	0.9	1	2	1	2	1	2							3	2
33 EQUI PRA	42.9	2.6	3	2			11	2					4	2		
34 EPIL ANG	42.9	0.7									2	2	1	2	2	2
35 SMIL STE	42.9	0.6									1	2	1	2	2	2
36 ACHI MIL	42.9	0.4							1	2			1	2	1	2
37 OSMO DEP	42.9	0.4	1	2			1	2			1	2				
38 ARAL NUD	28.6	1.9					2	2			11	2				
39 FRAG VIR	28.6	0.9											1	2	5	2
40 EQUI SYL	28.6	0.7			1	2			4	2						
41 VIOL REN	28.6	0.6	1	2							3	2				
42 GALI BOR	28.6	0.4					2	2	1	2						
43 GALI TRI	28.6	0.4			1	2					2	2				
44 ASTE CON	28.6	0.3									1	2			1	2
45 LATH OCH	28.6	0.3									1	2	1	2		
46 MONE UNI	28.6	0.3					1	2							1	2
47 RUBU ARC	28.6	0.3			1	2			1	2						
48 HEDY ALP	14.3	0.7													5	2
49 ASTE CIL	14.3	0.4					3	2								
50 ORTH SEC	14.3	0.4													3	2
51 GEUM TRI	14.3	0.3							2	2						
52 ARCT UVA	14.3	0.1													1	2
53 ARNI COR	14.3	0.1							1	2						
54 ASTE SPP	14.3	0.1											1	2		
55 DELP GLA	14.3	0.1									1	2				
56 EQUI HYE	14.3	0.1													1	2
57 GEUM SPP	14.3	0.1	1	2												
58 GYMN DRY	14.3	0.1			1	2										
59 MAIA CAN	14.3	0.1									1	2				
60 OXYC MIC	14.3	0.1					1	2								
61 PYRO ASA	14.3	0.1											1	2		
62 PYRO CHL	14.3	0.1	1	2												
63 THAL OCC	14.3	0.1											1	2		
64 THAL VEN	14.3	0.1													1	2
65 VACC VIT	14.3	0.1					1	2								
66 VICI AME	14.3	0.1											1	2		
G LAYER																
67 ELYM INN	28.6	2.6									8	2			10	2
68 CALA STR	28.6	0.3	1	2					1	2						
69 CARE SPP	14.3	3.6							25	2						
70 CALA INE	14.3	0.3											2	2		
71 CARE DIS	14.3	0.3			2	2										
72 CALA SPP	14.3	0.1											1	2		
73 CARE COC	14.3	0.1	1	2												
74 CARE VAG	14.3	0.1					1	2								
75 GLYC STR	14.3	0.1			1	2										

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BF	8	

PICEA GLAUCA/EQUISETUM SPP

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 21 PAGE 3

PLOT NUMBER	AVERAGE VALUE		3G P32B		3G P176		3G P156		3G 169A		20 8644		3G PO13		20 7497	
NUMBER OF SPECIES PER PLOT	31.6		34		31		34		27		31		34		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
D LAYER																
76 HYLO SPL	85.7	33.1	30	2	57	2	52	2	50	2	10	2			33	2
77 PTIL CRI	85.7	16.4	14	2	16	2	25	2	30	2			1	2	29	2
78 PLEU SCH	85.7	7.4	10	2	5	2	18	2	10	2	8	2	1	2		
79 DICR POL	28.6	2.0	12	2					2	2						
80 PLAG ELL	28.6	1.9			12	2	1	2								
81 AULA PAL	14.3	0.6			4	2										
82 POLY JUN	14.3	0.6													4	2
83 MNIU AFF	14.3	0.4									3	2				
84 EURH PUL	14.3	0.3	2	2												
85 HELO BLA	14.3	0.3			2	2										
86 BRAC SPP	14.3	0.1											1	2		
87 DICR SCO	14.3	0.1	1	2												
88 MNIU ARI	14.3	0.1	1	2												
89 MNIU SPI	14.3	0.1	1	2												
90 PLAG DRU	14.3	0.1	1	2												
91 POHL NUT	14.3	0.1													1	2
92 RHYT TRI	14.3	0.1					1	2								
93 SPHA WAR	14.3	0.1							1	2						
L LAYER																
94 PELT APH	28.6	0.9					5	2	1	2						
95 PELT MAL	14.3	0.3													2	2

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 21

TITLE : BF 8 PICEA GLAUCA/EQUISETUM SPP

		3G	3G	3G	3G	20	3G	20
PLOT NUMBER	MEAN	P32B	P176	P156	169A	8644	PO13	7497
TOWNSHIP & RANGE		64 5	6611	6611	6611	63 4	68 5	59 4
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 10	83L 12	83L 12	83L 12	83L 7	83L 15	83L 1
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	943.6	925	970	885	1065	980	550	1230
SLOPE(%)	1.1	2	0	4	0	1	0	1
ASPECT(DEG)		330		320		30		40
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		HG	H	SHD	SHD	SHG	SHG	SM
NUTRIENT REGIME		M	PM	PM	M		PM	
OVERLYING MATERIAL		Mvm		Mi		F	Fo	F
UNDERLYING MATERIAL								
EROSION/DEPOSITION				W				
SOIL SUBGROUP		O	O	O			CU	
SOIL GREAT GROUP		LG	G	HG			R	
SOIL DRAINAGE		I	P	I	P	MW	W	I
SOLUM THICKNESS(CM)	52.0			52				
TYPE & DEPTH TO RESTRICT(CM)								
THICKNESS LFH(CM)	10.0			10				
pH-LFH	0.0							
-A	8.0			8.0			8.0	
-B	8.0			8.0				
-C	8.0			8.0			8.0	
TEXTURE-A/1				Si			S	
-B/2				L				
-C/3				SiL			S	
COARSE FRAGMENTS-B(%)	0.0							
SEEPAGE(*) & MOTTLING(CM)				* 32				
ROOTING DEPTH(CM)	0.0							
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)	111.8	95	100	142			110	
CANOPY HEIGHT(M)	28.2	27	30	27	19		38	
MEAN ANNUAL INCREMENT	0.0							
STRATA COVERAGE(%)-A	47.1	70	50	35	35	65	30	45
-B	15.0	10	10	10	5	25	30	15
-C	32.9	20	30	40	35	50	10	45
-G	6.7	1	5	1	25	3	2	10
-D	68.4	95	95	98	98	25	0	68
-L	1.1	0	0	5	1	0	0	2
SURFACE SUBST(%)-DEAD WOOD	5.6	3	5	5	1	8	15	2
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0
-MIN.SOIL	0.7	0	0	0	0	0	5	0
-ORGANIC	93.6	97	95	95	99	92	80	97
-OPEN WATER	0.1	0	0	0	0	0	0	1
BIOMASS(KG/HA)-FORBS	0.0							
-GRAMINOIDS	0.0							
-BROWSE	0.0							

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	1	

PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 22 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 4577		20 8521		20 8506		20 8528		GP 4135		GP 3106		3B F071		3B F046		3B F048	
NUMBER OF SPECIES PER PLOT	34.6		19		21		25		27		53		31		51		40		44	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																				
1 PINU CON	100.0	39.1	45	2	47	2	48	2	25	2	30	3	45	3	2	2	55	2	55	2
2 PICE MAR	22.2	0.7													5	2			1	2
3 POPU TRE	11.1	0.6							5	2										
4 ABIE LAS	11.1	0.4													4	2				
5 PICE GLA	11.1	0.1																	1	2
A2 LAYER																				
PINU CON	100.0	3.5	5	2	3	2	2	2	5	2	3	3	.5	3	3	2	5	2	5	2
PICE GLA	44.4	0.8					3	2							1	2	2		1	2
PICE MAR	33.3	0.8													2	2	3	2	2	2
ABIE LAS	11.1	0.7													6	2				
6 PICE ENE	11.1	0.2									2	3								
POPU TRE	11.1	0.1	1	3																
E LAYER																				
7 CETR HAL	55.6	1.8									.5	3	.5	3	5	2	5	2	5	2
8 CETR PIN	55.6	1.8									.5	3	.5	3	5	2	5	2	5	2
9 HYPO PHY	55.6	1.8									.5	3	.5	3	5	2	5	2	5	2
10 PARM AMB	55.6	1.8									.5	3	.5	3	5	2	5	2	5	2
11 BRYO FUS	44.4	0.6									.5	3	.5	3			2	2	2	2
12 PARM HYP	33.3	1.7													5	2	5	2	5	2
13 USNE SCA	33.3	1.7													5	2	5	2	5	2
14 BRYO FRE	33.3	0.7									.5	3					3	2	3	2
15 PARM SUL	22.2	0.1									.5	3	.5	3						
16 USNE ALP	22.2	0.1									.5	3	.5	3						
17 USNE SOR	22.2	0.1									.5	3	.5	3						
18 ALEC SAR	11.1	0.6													5	2				
19 BRYO CAP	11.1	0.1									.5	3								
20 CETR MER	11.1	0.1											.5	3						
21 HYPO TUB	11.1	0.1									.5	3								
22 PLAT GLA	11.1	0.1									.5	3								
23 RAMA FAS	11.1	0.1									.5	3								
24 USNE SUB	11.1	0.1									.5	3								
B1 LAYER																				
PICE MAR	22.2	0.4													3	2	1	2		
25 SALI SCO	22.2	0.3	1	2													2	2		
ABIE LAS	11.1	0.6													5	2				
PINU CON	11.1	0.2													2	2				
PICE ENE	11.1	0.1									.5	3								
PICE GLA	11.1	0.1															1	2		
POPU TRE	11.1	0.1	1	2																
26 SALI BEB	11.1	0.1			1	2														
B2 LAYER																				
27 LEDU GRO	88.9	25.6			20	2	25	2	25	2	15	3	15	3	30	2	60	3	40	3
28 VACC MYR	88.9	6.1	2	2	10	2	2	2			15	3	10	3	10	2	3	2	3	2
29 ROSA ACI	77.8	1.8	4	2	1	2	1	2	2	2	.5	3					3	2	5	2
30 ALNU CRI	33.3	2.1									.5	3					15	2	3	2
31 SPIR BET	33.3	1.4									10	3					2	2	1	2
32 SORB SCO	33.3	0.9									.5	3	5	3			3	2		

University of Alberta

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	1	

PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 22 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 4577		20 8521		20 8506		20 8528		GP 4135		GP 3106		3B F071		3B F046		3B F048	
NUMBER OF SPECIES PER PLOT	34.6		19		21		25		27		53		31		51		40		44	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
PICE MAR	33.3	0.6													2	2	2	2	1	2
33 VACC MEM	22.2	1.1															7	2	3	2
34 RIBE LAC	22.2	0.4															2	2	2	2
SALI SCO	22.2	0.4					2	2									2	2		
PICE GLA	22.2	0.3															1	2	2	2
ABIE LAS	11.1	1.1													10	2				
35 LONI INV	11.1	0.6																	5	2
36 SALI BAR	11.1	0.6													5	2				
37 SALI GLA	11.1	0.6							5	2										
38 VIBU EDU	11.1	0.3																	3	2
39 BETU PUM	11.1	0.2					2	2												
PICE ENE	11.1	0.2							2	2										
PINU CON	11.1	0.1													1	2				
SALI BEB	11.1	0.1			1	2														
C LAYER																				
40 CORN CAN	100.0	10.1	3	2	8	2	5	2	13	2	15	3	15	3	7	2	10	2	15	2
41 LINN BOR	100.0	5.9	12	2	4	2	10	2	5	2	5	3	5	3	2	2	5	2	5	2
42 VACC VIT	77.8	15.4	37	2	10	2	57	2	20	2			10	3	3	2			2	2
43 VACC CAE	77.8	2.7	1	2	1	2	1	2	1	2	10	3	5	3	5	2				
44 EPIL ANG	77.8	2.2					6	2	3	2	1	3	.5	3	1	2	4	2	4	2
45 PETA PAL	66.7	2.2			1	2	1	2			10	3			2	2	2	2	4	2
46 LYCO ANN	66.7	2.0					1	2	1	2	3	3	10	3	1	2			2	2
47 ARNI COR	55.6	0.5			1	2	1	2	1	1			.5	3					1	2
48 RUBU PED	44.4	2.9							1	2	15	3	5	3	5	2				
49 STRE AMP	44.4	1.1									3	3	5	3	1	2			1	2
50 RUBU PUB	33.3	0.4											1	3			1	2	2	2
51 MERT PAN	33.3	0.3					1	2	1	2									1	2
52 ARNI LAT	22.2	1.3											5	3	7	2				
53 MAIA CAN	22.2	0.7	1	2							5	3								
54 EQUI SYL	22.2	0.6									3	3					2	2		
55 GYMN DRY	22.2	0.3									.5	3					2	2		
56 PYRO ASA	22.2	0.3					1	2					2	3						
57 EQUI ARV	22.2	0.2													1	2	1	2		
58 ERIG PER	11.1	0.8													7	2				
59 TIAR UNI	11.1	0.6									5	3								
60 VERA ESC	11.1	0.6									5	3								
61 ASTE CON	11.1	0.4							4	2										
62 LYCO CLA	11.1	0.4			4	2														
63 EQUI SCI	11.1	0.3							3	2										
64 GAUL HIS	11.1	0.3																	3	2
65 LYCO COM	11.1	0.3													3	2				
66 EMPE NIG	11.1	0.2													2	2				
67 EQUI PRA	11.1	0.1											1	3						
68 GEOC LIV	11.1	0.1					1	2												
69 LATH OCH	11.1	0.1			1	2														
70 ORTH SEC	11.1	0.1													1	2				
71 PEDI BRA	11.1	0.1													1	2				
72 PYRO CHL	11.1	0.1	1	2																

University of Alberta

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	1	

PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	AVERAGE VALUE		20 4577		20 8521		20 8506		20 8528		GP 4135		GP 3106		3B F071		3B F046		3B F048	
NUMBER OF SPECIES PER PLOT	34.6		19		21		25		27		53		31		51		40		44	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
73 SMIL RAC	11.1	0.1									.5	3								
G LAYER																				
74 ELYM INN	55.6	0.9	1	2	1	2	3	2	2	2									1	2
75 CALA CAN	33.3	1.1							2	2	5	3					3	2		
76 CALA INE	11.1	0.2																	2	2
77 CALA STR	11.1	0.1					1	2												
78 TRIS SPI	11.1	0.1					1	2												
D LAYER																				
79 PLEU SCH	100.0	44.8	42	2	90	2	61	2	50	2	30	3	50	3	45	2	15	2	20	2
80 PTIL CRI	88.9	17.9			1	2	1	2	9	2	20	3	20	3	5	2	65	3	40	2
81 HYLO SPL	88.9	14.6			1	2	1	2	6	2	20	3	20	3	45	2	8	2	30	2
82 POLY JUN	44.4	0.6	1	2					2	2	.5	3			2	2				
83 AULA PAL	22.2	0.7							1	2					5	2				
84 SPHA RUS	22.2	0.3															2	2	1	2
85 DICR SCO	22.2	0.2	1	2					1	2										
86 DICR UND	11.1	0.3													3	2				
87 DICR FLA	11.1	0.1									.5	3								
88 LOPH LON	11.1	0.1									.5	3								
89 LOPH VEN	11.1	0.1									.5	3								
90 POHL NUT	11.1	0.1									.5	3								
91 POLY COM	11.1	0.1									.5	3								
92 POLY STR	11.1	0.1											5	3						
93 PTIL PUL	11.1	0.1									.5	3								
L LAYER																				
94 PELT APH	66.7	1.2	2	2	1	2			2	2					2	2	1	2	3	2
95 PELT MAL	33.3	0.4			1	2									2	2			1	2
96 CLAD MIT	22.2	0.2									.5	3			1	2				
97 CLAD CAP	11.1	0.1									.5	3								
98 CLAD CEN	11.1	0.1									.5	3								
99 CLAD CON	11.1	0.1									.5	3								
100 CLAD COR	11.1	0.1													1	2				
101 CLAD CRI	11.1	0.1	1	2																
102 CLAD ECM	11.1	0.1													1	2				
103 CLAD GRA	11.1	0.1													1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 22

TITLE : BU 1 PINUS CONTORTA/LEDUM GROENLANDICUM/PLEUROZIUM SCHREBERI

		20	20	20	20	GP	GP	3B	3B	3B
PLOT NUMBER	MEAN	4577	8521	8506	8528	4135	3106	F071	F046	F048
TOWNSHIP & RANGE		6110	6110	6110	6113	63 2	61 3	58 5	59 4	59 4
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 6	83L 6	83L 6	83L 5	83L 8	83L 1	83L 2	83L 2	83L 2
PHYSIOGRAPHIC SUBREGION										
GEOMORPHIC SYSTEM										
ECOSECTION										
ELEVATION(MASL)	1228.9	1260	1280	1210	1200	1100	1305	1440	1160	1105
SLOPE(%)	6.8	20	5	2	1	0	5	3	0	25
ASPECT(DEG)		102	176	182	284		230	346		268
ENVIRONMENT/SOILS :										
ECOLOGICAL MOISTURE REGIME		SM	SM	SHG	M	M	SM	SHG	SHG	SHG
NUTRIENT REGIME						M	M	SM	M	M
OVERLYING MATERIAL		C	L	F	F	M	M	MGv	Sv	MGv
UNDERLYING MATERIAL								S	R	R
EROSION/DEPOSITION										
SOIL SUBGROUP						BR	O	BR	O	O
SOIL GREAT GROUP						GL	GL	GL	LG	LG
SOIL DRAINAGE		W	W	MW	W	MW	W	W	I	I
SOLUM THICKNESS(CM)	69.0					66	40	67	90	82
TYPE & DEPTH TO RESTRICT(CM)								W 46	W 50	W 61
THICKNESS LFH(CM)	8.8					5	10	9	11	9
pH-LFH	3.6					3.9	3.3			
-A	4.6					4.9	3.6	4.5	4.0	6.0
-B	5.2					4.4	4.4	5.0	6.0	6.0
-C	6.7							6.0	8.0	6.0
TEXTURE-A/1						L	SIL	SIL	SIL	SL
-B/2						L	CL	LS	SICL	CL
-C/3								SCL		SICL
COARSE FRAGMENTS-B(%)	0.0									
SEEPAGE(*) & MOTTLING(CM)								*	* 0	* 20
ROOTING DEPTH(CM)	29.0					52			25	10
VEGETATION :										
ASSOCIATION										
STAND AGE(YR)	87.3		81	116		81	71			
CANOPY HEIGHT(M)	18.0		22	22		20	15	11	18	18
MEAN ANNUAL INCREMENT	0.0									
STRATA COVERAGE(%)-A	47.2	50	50	50	35	35	45	30	65	65
-B	36.6	2	22	30	30	40	30	50	70	55
-C	45.6	50	30	70	45	70	65	40	20	20
-G	2.0	1	1	1	5	5	0	0	3	2
-D	77.4	47	97	65	68	70	80	90	90	90
-L	4.4	3	2	0	2	10	10	7	1	5
SURFACE SUBST(%)-DEAD WOOD	6.8	10	3	3	8	15	5	3	9	5
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0
-ORGANIC	93.1	90	97	97	92	85	95	97	90	95
-OPEN WATER	0.1	0	0	0	0	0	0	0	1	0
BIOMASS(KG/HA)-FORBS	0.0									
-GRAMINOIDS	0.0									
-BROWSE	0.0									

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	2	

PINUS CONTORTA/LEDUM GROENLANDICUM/VACCINIUM MEMBRANACEUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 23 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P051		3G P062		3G F052		20 8531		GP 4133	
NUMBER OF SPECIES PER PLOT	31.2		29		23		24		27		53	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 PINU CON	100.0	31.4	40	2	50	2	30	2	22	2	15	3
2 POPU TRE	20.0	2.0									10	3
3 ABIE LAS	20.0	1.0							5	2		
4 PICE ENE	20.0	0.2							1	2		
5 PICE MAR	20.0	0.2			1	2						
A2 LAYER												
PINU CON	100.0	3.0	5	2	2	2	2	2	1	2	5	3
PICE MAR	40.0	0.6			1	2	2	2				
ABIE LAS	20.0	4.0							20	2		
POPU TRE	20.0	1.0									5	3
PICE ENE	20.0	0.2							1	2		
6 SALI SCO	20.0	0.2	1	2								
E LAYER												
7 BRYO FUS	20.0	0.1									.5	3
8 CETR HAL	20.0	0.1									.5	3
9 CETR PIN	20.0	0.1									.5	3
10 HYPO PHY	20.0	0.1									.5	3
11 PARM AMB	20.0	0.1									.5	3
12 PARM HYP	20.0	0.1									.5	3
13 PARM SUL	20.0	0.1									.5	3
14 PLAT GLA	20.0	0.1									.5	3
15 USNE ALP	20.0	0.1									.5	3
16 USNE SOR	20.0	0.1									.5	3
17 USNE SUB	20.0	0.1									.5	3
B1 LAYER												
18 ALNU CRI	20.0	1.0	5	2								
ABIE LAS	20.0	0.4							2	2		
B2 LAYER												
19 VACC MEM	100.0	17.0	20	2	10	2	15	2	15	2	25	3
20 VACC MYR	100.0	12.8	5	2	10	2	5	2	14	2	30	3
21 LEDU GRO	100.0	9.8	1	2	18	2	10	2	10	2	10	3
ALNU CRI	60.0	4.0	15	2	1	2	4	2				
22 SORB SCO	60.0	1.4	1	2			1	2			5	3
ABIE LAS	60.0	1.3			1	2			5	2	.5	3
23 SPIR BET	40.0	2.4							7	2	5	3
SALI SCO	40.0	0.3	1	2							.5	3
24 RHOD ALB	20.0	0.6							3	2		
25 ROSA ACI	20.0	0.6							3	2		
26 SALI BEB	20.0	0.4			2	2						
27 LONI INV	20.0	0.2							1	2		
28 PICE GLA	20.0	0.2					1	2				
29 RIBE TRI	20.0	0.2	1	2								
30 VIBU EDU	20.0	0.2	1	2								
PINU CON	20.0	0.1									.5	3
C LAYER												
31 CORN CAN	100.0	7.0	9	2	3	2	6	2	12	2	5	3
32 LINN BOR	100.0	3.2	1	2	2	2	5	2	3	2	5	3

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	2	

PINUS CONTORTA/LEDUM GROENLANDICUM/VACCINIUM MEMBRANACEUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 23 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3G P051		3G P062		3G P052		2O 8531		GP 4133	
NUMBER OF SPECIES PER PLOT	31.2		29		23		24		27		53	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
33 RUBU PED	100.0	3.2	1	2	1	2	1	2	3	3	10	3
34 LYCO ANN	80.0	1.6			1	2	1	2	1	2	5	3
35 ORTH SEC	80.0	0.7	1	2			1	2	1	2	.5	3
36 EPIL ANG	40.0	1.4	2	2							5	3
37 LYCO COM	40.0	1.2					1	2			5	3
38 ARNI COR	40.0	1.0	4	2			1	2				
39 PETA PAL	40.0	0.6	2	2			1	2				
40 VACC VIT	40.0	0.6			2	2	1	2				
41 STRE AMP	40.0	0.3					1	2			.5	3
42 VACC CAE	20.0	2.0									10	3
43 VACC MYT	20.0	2.0									10	3
44 RUBU PUB	20.0	0.6	3	2								
45 SMIL RAC	20.0	0.4	2	2								
46 LIST COR	20.0	0.2					1	2				
47 PYRO CHL	20.0	0.2	1	2								
48 ASTE CON	20.0	0.1									.5	3
49 ASTE LAE	20.0	0.1									.5	3
50 HABE VIR	20.0	0.1									.5	3
51 PYRO ASA	20.0	0.1									.5	3
G LAYER												
52 CALA STR	60.0	0.6	1	2	1	2	1	2				
53 ELYM INN	20.0	0.2							1	2		
54 CALA CAN	20.0	0.1									.5	3
D LAYER												
55 PLEU SCH	100.0	34.6	29	2	60	2	30	2	34	2	20	3
56 PTIL CRI	100.0	19.6	25	2	11	2	39	2	3	2	20	3
57 HYLO SPL	100.0	15.8	1	2	2	2	9	2	47	2	20	3
58 DICR SCO	40.0	0.3	1	2							.5	3
59 DICR POL	20.0	0.6							3	2		
60 DICR BRE	20.0	0.2			1	2						
61 PELT APH	20.0	0.2	1	2								
62 DICR FUS	20.0	0.1									.5	3
63 PLAG LAE	20.0	0.1									.5	3
64 POHL NUT	20.0	0.1									.5	3
65 TETR PEL	20.0	0.1									.5	3
L LAYER												
PELT APH	60.0	2.8	1	2					3	2	10	3
66 PELT MAL	20.0	0.8							4	2		
67 CLAD ECM	20.0	0.2			1	2						
68 CLAD MIT	20.0	0.2			1	2						
69 CLAD SPP	20.0	0.2			1	2						
70 CLAD CEN	20.0	0.1									.5	3
71 CLAD CON	20.0	0.1									.5	3
72 CLAD COR	20.0	0.1									.5	3
73 CLAD DEF	20.0	0.1									.5	3
74 CLAD GON	20.0	0.1									.5	3
75 CLAD PHY	20.0	0.1									.5	3

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TITLE : BU 2 PINUS CONTORTA/LEDUM GROENLANDICUM/VACCINIUM MEMBRANACEUM

TABLE 23

	MEAN					
		3G	3G	3G	20	GP
PLOT NUMBER		P051	P062	P052	8531	4133
TOWNSHIP & RANGE		65 9	65 9	65 9	6113	62 2
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L	83L
		11	11	11	5	8
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	1154.0	1130	1080	1130	1210	1220
SLOPE(%)	6.8	25	0	4	0	5
ASPECT(DEG)		315		41		350
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		M	M	SHG	SM	M
NUTRIENT REGIME		SM	SM	SM		M
OVERLYING MATERIAL		Mv1	Mv	Mv		M
UNDERLYING MATERIAL		P	R	R		
EROSION/DEPOSITION						
SOIL SUBGROUP		E		O		GL
SOIL GREAT GROUP		DYB		LG		GL
SOIL DRAINAGE		W	MW	I	W	MW
SOLUM THICKNESS(CM)	38.5	34	30	55		35
TYPE & DEPTH TO RESTRICT(CM)						
THICKNESS LFH(CM)	7.3	7	8	6		8
pH-LFH	3.9					3.9
-A	3.9	4.0	4.0	4.0		3.8
-B	4.8	5.0	5.0	5.0		4.4
-C	4.8	5.0	5.0	5.0		4.4
TEXTURE-A/1		S1	S1	S1		L
-B/2		CL	S1L	S1L		CL
-C/3		S1C	S1CL	SCL		CL
COARSE FRAGMENTS-B(%)	2.C					2
SEEPAGE(*) & MOTTLING(CM)		*		*		
ROOTING DEPTH(CM)	0.0					
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	94.8	80	87	132		80
CANOPY HEIGHT(M)	19.3	16		21	20	20
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	43.0	45	55	30	50	35
-B	39.0	45	40	30	30	50
-C	35.8	20	10	20	50	79
-G	1.0	1	1	1	1	1
-D	71.6	60	75	80	83	60
-L	4.0	1	2	0	7	10
SURFACE SUBST(%)-DEAD WOOD	5.4	10	5	0	7	5
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	74.6	90	95	0	93	95
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL | ZONE | ASSC | TYPE
ECOSYM UNIT | BU | 3 |

PINUS CONTORTA/ALNUS CRISPA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 24 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 5762		20 5766		3B F145		3B F049		3G P074		3B F045	
NUMBER OF SPECIES PER PLOT	38.3		25		29		50		49		28		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 PINU CON	100.0	47.5	62	2	63	2	35	2	55	2	40	2	30	2
2 POPU TRE	33.3	2.0					5	2					7	2
3 POPU BAL	16.7	1.7					10	2						
4 PICE ENE	16.7	0.5							3	2				
5 PICE GLA	16.7	0.3									2	2		
A2 LAYER														
PINU CON	100.0	4.3	3	2	2	2	5	2	5	2	1	2	10	2
POPU TRE	16.7	0.5											3	2
PICE ENE	16.7	0.3							2	2				
POPU BAL	16.7	0.3					2	2						
PICE GLA	16.7	0.2									1	2		
6 PICE MAR	16.7	0.2							1	2				
7 SALI SCO	16.7	0.2									1	2		
E LAYER														
8 CETR HAL	50.0	2.5					5	2	5	2			5	2
9 CETR PIN	50.0	2.5					5	2	5	2			5	2
10 HYPO PHY	50.0	2.5					5	2	5	2			5	2
11 PARM HYP	50.0	2.5					5	2	5	2			5	2
12 PARM AMB	33.3	1.7							5	2			5	2
13 USNE SCA	33.3	1.7							5	2			5	2
14 BRYO FRE	33.3	1.0							3	2			3	2
15 BRYO FUS	33.3	0.7							2	2			2	2
16 USNE SUB	16.7	1.3					8	2						
17 USNE SOR	16.7	1.2					7	2						
18 BRYO SPP	16.7	0.8					5	2						
B1 LAYER														
19 ALNU CRI	83.3	4.5	10	2	3	2	10	2	2	2			2	2
SALI SCO	33.3	1.5							2	2			7	2
PICE GLA	33.3	0.5			2	2					1	2		
POPU TRE	16.7	0.3											2	2
PICE ENE	16.7	0.2							1	2				
PICE MAR	16.7	0.2									1	2		
B2 LAYER														
ALNU CRI	100.0	19.2	10	2	35	2	20	2	10	2	5	2	35	3
20 ROSA ACI	100.0	4.8	8	2	5	2	2	2	5	2	2	2	7	2
21 VIBU EDU	83.3	4.3			5	2	3	2	2	2	1	2	15	2
22 SPIR BET	83.3	2.2	4	2	5	2			1	2	1	2	2	2
23 RIBE LAC	50.0	1.5					5	2	1	2			3	2
24 LONI INV	33.3	2.0					2	2					10	3
SALI SCO	33.3	1.5							2	2			7	3
PICE GLA	33.3	0.8	4	2							1	2		
25 RUBU PAR	16.7	2.7			16	2								
26 VACC MEM	16.7	1.0	6	2										
PICE ENE	16.7	0.8							5	2				
27 RUBU IDA	16.7	0.8					5	2						
POPU TRE	16.7	0.5											3	2
28 ABIE LAS	16.7	0.2							1	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	3	

PINUS CONTORTA/ALNUS CRISPA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 24 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 5762		20 5766		3B F145		3B F049		3G P074		3B F045	
NUMBER OF SPECIES PER PLOT	38.3		25		29		50		49		28		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
29 MENZ FER	16.7	0.2					1	2						
PICE MAR	16.7	0.2							1	2				
PINU CON	16.7	0.2									1	2		
POPU BAL	16.7	0.2							1	2				
30 RIBE TRI	16.7	0.2					1	2						
31 SALI BEB	16.7	0.2					1	2						
32 SAMB RAC	16.7	0.2					1	2						
33 SORB SCO	16.7	0.2							1	2				
C LAYER														
34 ASTE CON	100.0	6.5	8	2	9	2	4	2	7	2	1	2	10	2
35 EPIL ANG	100.0	6.5	3	2	16	2	2	2	15	2	2	2	1	2
36 LINN BOR	100.0	5.2	7	2	3	2	2	2	3	2	11	2	5	2
37 RUBU PUB	100.0	2.8	1	2	3	2	3	2	2	2	1	2	7	2
38 PYRO ASA	100.0	2.7	4	2	2	2	1	2	2	2	5	2	2	2
39 CORN CAN	83.3	5.5	8	2	8	2			10	2	1	2	6	2
40 MAIA CAN	83.3	2.3	5	2	3	2			3	2	1	2	2	2
41 MERT PAN	66.7	3.3			5	2	2	2	3	2			10	2
42 ARNI COR	66.7	1.2	1	2	4	2			1	2	1	2		
43 MITE NUD	66.7	1.0			1	2	2	2	1	2			2	2
44 EQUI ARV	50.0	1.2			1	2	4	2					2	2
45 GALI TRI	50.0	0.5			1	2	1	2					1	2
46 PETA PAL	50.0	0.5			1	2	1	2					1	2
47 HERA LAN	33.3	2.2			6	2	7	3						
48 FRAG VIR	33.3	0.8					1	2					4	2
49 STRE AMP	33.3	0.8	3	2			2	2						
50 ASTE CIL	33.3	0.5					2	2					1	2
51 EQUI SYL	33.3	0.5	1	2			2	2						
52 GYMN DRY	16.7	1.7					10	3						
53 ARAL NUD	16.7	1.2	7	2										
54 LATH OCH	16.7	0.8											5	2
55 RUBU PED	16.7	0.7					4	2						
56 ACTA RUB	16.7	0.5					3	2						
57 DELP GLA	16.7	0.3					2	2						
58 BOTR VIR	16.7	0.2											1	2
59 EQUI SCI	16.7	0.2							1	2				
60 HABE OBT	16.7	0.2							1	2				
61 ORTH SEC	16.7	0.2							1	2				
62 OSMO CHI	16.7	0.2					1	2						
63 VACC VIT	16.7	0.2							1	2				
64 VERA ESC	16.7	0.2					1	2						
65 VIOL REN	16.7	0.2							1	2				
G LAYER														
66 ELYM INN	66.7	4.5			3	2			5	2	4	2	15	2
67 CALA CAN	50.0	1.3			4	2	2	2					2	2
68 CALA STR	16.7	0.3							2	2				
D LAYER														
69 PLEU SCH	100.0	11.5	1	2	14	2	2	2	25	2	12	2	15	2
70 HYLO SPL	83.3	8.3	3	2			2	2	25	2	15	2	5	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	3	

PINUS CONTORTA/ALNUS CRISPA/RUBUS PUBESCENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	AVERAGE VALUE		20		20		3B		3B		3G		3B	
PLOT NUMBER			5762		5766		F145		F049		P074		F045	
NUMBER OF SPECIES PER PLOT	38.3		25		29		50		49		28		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
71 PTIL CRI	66.7	7.2	1	2	5	2	2	2	35	2				
72 DICR SCO	50.0	1.2	4	2	1	2							2	2
73 BRAC SAL	33.3	0.3									1	2	1	2
74 DICR POL	33.3	0.3									1	2	1	2
75 BRAC STA	16.7	1.2					7	2						
76 DICR FUS	16.7	0.3							2	2				
77 PLAG ELL	16.7	0.2					1	2						
78 PLAG MED	16.7	0.2											1	2
79 POHL NUT	16.7	0.2	1	2										
80 PTIL CIL	16.7	0.2			1	2								
81 PTIL PUL	16.7	0.2									1	2		
L LAYER														
82 PELT APH	50.0	1.0							3	2	1	2	2	2
83 CLAD MIT	16.7	0.5											3	2
84 CLAD COR	16.7	0.2	1	2										

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 24

TITLE : BU 3 PINUS CONTORTA/ALNUS CRISPA/RUBUS PUBESCENS

		20	20	3B	3B	3G	3B
PLOT NUMBER	MEAN	5762	5766	F145	F049	P074	F045
TOWNSHIP & RANGE		63 8	63 2	60 4	59 4	64 8	59 4
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 6	83L 6	83L 1	83L 2	83L 11	83 L 2
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	1171.7	1170	1230	1270	1200	1080	1080
SLOPE(%)	36.0	22	22	30	65	40	37
ASPECT(DEG)		180	180	295	305	274	90
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		SHG	M	SHG	M	SM	M
NUTRIENT REGIME				PM	PM		3
OVERLYING MATERIAL		M	CM	Cv	Cv	Mb	Cv
UNDERLYING MATERIAL				S	Sv	Ri	R
EROSION/DEPOSITION						F	
SOIL SUBGROUP				GL	O	BR	O
SOIL GREAT GROUP				GL	EB	GL	GL
SOIL DRAINAGE		MW	MW	I	MW	W	MW
SOLUM THICKNESS(CM)	48.8			41	20	52	82
TYPE & DEPTH TO RESTRICT(CM)				B115	B 50	B200	W 67
THICKNESS LFH(CM)	8.3			5	9	9	10
pH-LFH	0.0						
-A	5.8			5.5		4.0	8.0
-B	6.6			6.5	6.0	6.0	8.0
-C	7.2			7.5	8.0	6.0	
TEXTURE-A/1				L		S	SiL
-B/2				CL	CL	SCL	SiC
-C/3				SCL	SiCL	SCL	
COARSE FRAGMENTS-B(%)	3.0			5			1
SEEPAGE(*) & MOTTLING(CM)							*
ROOTING DEPTH(CM)	27.3			26	36		20
VEGETATION :							
ASSOCIATION							BU5
STAND AGE(YR)	89.6	117	109		70	62	90
CANOPY HEIGHT(M)	19.0			24	18	16	18
MEAN ANNUAL INCREMENT	0.0						
STRATA COVERAGE(%)-A	57.8	65	65	57	65	45	50
-B	35.8	30	70	0	30	10	75
-C	43.3	60	60	45	35	25	35
-G	7.3	5	10	2	7	5	15
-D	35.8	10	25	15	90	60	15
-L	1.7	1	0	0	3	1	5
SURFACE SUBST(%)-DEAD WOOD	5.5	3	7	5	10	3	5
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0
-ORGANIC	94.5	97	93	95	90	97	95
-OPEN WATER	0.0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	4	

PINUS CONTORTA/ALNUS CRISPA/LEDUM GROENLANDICUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	AVERAGE VALUE		3G		3G		3G		3G	
PLOT NUMBER			P039		P178		P154		P140	
NUMBER OF SPECIES PER PLOT	23.8		33		27		19		16	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 PINU CON	100.0	33.8	40	2	35	2	30	2	30	2
2 PICE GLA	25.0	0.5			2	2				
A2 LAYER										
PINU CON	50.0	2.5	5	2	5	2				
3 PICE MAR	25.0	1.3							5	2
PICE GLA	25.0	0.3			1	2				
4 SALI SCO	25.0	0.3					1	2		
B1 LAYER										
5 ALNU CRI	100.0	45.0	60	2	30	2	30	2	60	2
PICE GLA	25.0	0.3	1	2						
PICE MAR	25.0	0.3							1	2
B2 LAYER										
6 LEDU GRO	100.0	7.3	2	2	1	2	25	2	1	2
ALNU CRI	100.0	3.3	1	2	2	2	5	2	5	2
7 VACC MEM	100.0	1.8	1	2	1	2	3	2	2	2
8 VACC MYR	50.0	2.0	3	2			5	2		
9 SPIR BET	50.0	1.0	1	2	3	2				
10 ROSA ACI	50.0	0.8	2	2	1	2				
11 VIBU EDU	50.0	0.8	2	2	1	2				
12 RUBU IDA	25.0	0.5	2	2						
C LAYER										
13 CORN CAN	100.0	8.8	3	2	12	2	10	2	10	2
14 RUBU PED	75.0	4.0	3	2			11	2	2	2
15 EPIL ANG	75.0	1.5	3	2	2	2	1	2		
16 LINN BOR	75.0	1.0	1	2	1	2			2	2
17 PYRO ASA	50.0	1.0	3	2	1	2				
18 EQUI SYL	50.0	0.8	2	2	1	2				
19 ARNI COR	50.0	0.5	1	2	1	2				
20 ORTH SEC	50.0	0.5			1	2			1	2
21 VIOL REN	50.0	0.5	1	2	1	2				
22 LYCO ANN	25.0	1.0					4	2		
23 RUBU PUB	25.0	1.0	4	2						
24 MITE NUD	25.0	0.8	3	2						
25 VACC VIT	25.0	0.5					2	2		
26 DRYO CAR	25.0	0.3	1	2						
27 EQUI SCI	25.0	0.3	1	2						
28 GALI TRI	25.0	0.3	1	2						
29 MAIA CAN	25.0	0.3			1	2				
30 OSMO DEP	25.0	0.3	1	2						
31 PETA PAL	25.0	0.3					1	2		
32 VACC CAE	25.0	0.3							1	2
33 VALE DIO	25.0	0.3	1	2						
G LAYER										
34 CALA STR	50.0	0.5	1	2			1	2		
35 CALA SPP	25.0	0.3			1	2				
D LAYER										
36 PLEU SCH	100.0	37.8	24	2	19	2	28	2	80	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	4	

PINUS CONTORTA/ALNUS CRISPA/LEDUM GROENLANDICUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3G P039		3G P178		3G P154		3G P140	
NUMBER OF SPECIES PER PLOT	23.8		33		27		19		16	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
37 PTIL CRI	100.0	22.8	27	2	18	2	41	2	5	2
38 POLY COM	75.0	1.3	2	2			1	2	2	2
39 DICR FUS	25.0	0.8			3	2				
40 PLAG DRU	25.0	0.5	2	2						
41 AULA PAL	25.0	0.3	1	2						
42 DICR POL	25.0	0.3					1	2		
43 DREP UNC	25.0	0.3					1	2		
44 PLAG LAE	25.0	0.3			1	2				
45 POLY JUN	25.0	0.3			1	2				
46 PTIL PUL	25.0	0.3			1	2				
L LAYER										
47 PELT APH	25.0	0.3							1	2

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY

TITLE : BU 4 PINUS CONTORTA/ALNUS CRISPA/LEDUM GROENLANDICUM

TABLE 25

		3G	3G	3G	3G
PLOT NUMBER	MEAN	P039	P178	P154	P140
TOWNSHIP & RANGE		65 8	6512	6612	6612
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L 11	83L 12	83L 12	83L 12
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	1101.3	1100	1100	1095	1110
SLOPE(%)	2.0	4	0	4	0
ASPECT(DEG)		44		373	
ENVIRONMENT/SOILS :					
ECOLOGICAL MOISTURE REGIME		SHG	M	SHG	HG
NUTRIENT REGIME		SM	SM	SM	SM
OVERLYING MATERIAL		Mb	Mv	GFu	Mv
UNDERLYING MATERIAL		R1	Ri		Rm
EROSION/DEPOSITION					
SOIL SUBGROUP		GL	E	O	O
SOIL GREAT GROUP		GL	DYB	G	LG
SOIL DRAINAGE		MW	W	I	I
SOLUM THICKNESS(CM)	39.8	49	32	38	40
TYPE & DEPTH TO RESTRICT(CM)			B 80		W 50
THICKNESS LFH(CM)	8.0	5	7	7	13
pH-LFH	0.0				
-A	4.5	4.0	5.0	4.0	5.0
-B	5.3	5.0	5.0	5.0	6.0
-C	5.5	5.0	5.0	6.0	6.0
TEXTURE-A/1		Si	SiL	LS	SiL
-B/2		SiCL	SiL	LS	SiCL
-C/3		SiCL	LS	LS	SCL
COARSE FRAGMENTS-B(%)	17.5		10		25
SEEPAGE(*) & MOTTLING(CM)		7		* 0	* 7
ROOTING DEPTH(CM)	0.0				
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	79.3	78	76	76	87
CANOPY HEIGHT(M)	24.0	26	25	21	24
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	42.5	45	40	35	50
-B	60.0	75	35	65	65
-C	23.8	30	20	30	15
-G	0.8	1	1	1	0
-D	65.0	55	45	70	90
-L	0.3	0	0	0	1
SURFACE SUBST(%)-DEAD WOOD	5.0	5	5	5	5
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0
-ORGANIC	95.0	95	95	95	95
-OPEN WATER	0.0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	5	

PINUS CONTORTA/STREPTOPUS AMPLEXIFOLIUS/PLEUROZIUM SCHREBERI

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 26 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3B F063		3B F060		3B F003		GP 3107		GP 3108	
NUMBER OF SPECIES PER PLOT	51.4		50		42		71		48		46	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 PINU CON	100.0	36.6	57	2	50	2	25	3	16	3	35	3
2 POPU TRE	60.0	4.6	8	2	5	2	10	3				
3 POPU BAL	20.0	1.0					5	3				
4 ABIE LAS	20.0	0.4							2	3		
5 PICE ENE	20.0	0.4							2	3		
A2 LAYER												
PINU CON	60.0	0.9	2	2			2	2			.5	3
POPU TRE	40.0	0.8	2	2			2	2				
ABIE LAS	20.0	1.0							5	3		
PICE ENE	20.0	1.0							5	3		
POPU BAL	20.0	1.0					5	2				
6 PICE GLA	20.0	0.2	1	2								
E LAYER												
7 CETR PIN	100.0	5.2	5	2	5	2	15	2	.5	3	.5	3
8 HYPO PHY	100.0	5.2	5	2	5	2	15	2	.5	3	.5	3
9 USNE SOR	100.0	4.8	3	2	5	2	15	2	.5	3	.5	3
10 PARM HYP	100.0	3.2	5	2	5	2	5	2	.5	3	.5	3
11 BRYO FUS	100.0	2.6	5	2	2	2	5	2	.5	3	.5	3
12 CETR HAL	80.0	5.1	5	2	5	2	15	2			.5	3
13 PARM AMB	80.0	3.1	5	2	5	2	5	2			.5	3
14 BRYO FRE	40.0	0.7			3	2			.5	3		
15 USNE SCA	40.0	0.5	2	2					.5	3		
16 USNE ALP	40.0	0.2							.5	3	.5	3
17 USNE SUB	40.0	0.2							.5	3	.5	3
18 ALEC SAR	20.0	0.1							.5	3		
19 CETR ERI	20.0	0.1									.5	3
20 CLAD GON	20.0	0.1							.5	3		
21 PARM SUL	20.0	0.1									.5	3
22 PLAT GLA	20.0	0.1							.5	3		
B1 LAYER												
23 ALNU CRI	20.0	1.0					5	2				
24 SALI SCO	20.0	0.6			3	2						
ABIE LAS	20.0	0.4					2	2				
PICE GLA	20.0	0.2					1	2				
POPU BAL	20.0	0.2					1	2				
PICE ENE	20.0	0.1							.5	3		
B2 LAYER												
25 VIBU EDU	100.0	6.9	10	2	7	2	7	2	.5	3	10	3
26 ROSA ACI	80.0	2.8	2	2	2	2	5	2			5	3
ALNU CRI	60.0	1.8	2	2			2	2	5	3		
27 VACC MEM	60.0	1.8	2	2	4	2	3	2				
28 LONI INV	40.0	5.0	10	2					15	3		
29 SORB SCO	40.0	3.0							5	3	10	3
ABIE LAS	40.0	2.2					1	2	10	3		
30 SPIR BET	40.0	1.8			6	2	3	2				
31 RIBE LAC	40.0	1.0	3	2			2	1				
32 RUBU IDA	40.0	0.8	3	2			1	2				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	5	

PINUS CONTORTA/STREPTOPUS AMPLEXIFOLIUS/PLEUROZIUM SCHREBERI

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 26 PAGE 2

PLOT NUMBER	AVERAGE VALUE		3B F063		3B F060		3B F003		GP 3107		GP 3108	
NUMBER OF SPECIES PER PLOT	51.4		50		42		71		48		46	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
POPU TRE	40.0	0.6			2	2	1	2				
33 VACC MYR	40.0	0.6			1	2					2	3
PICE GLA	40.0	0.4	1	2			1	2				
34 LEDU GRO	20.0	2.0									10	3
SALI SCO	20.0	1.0			5	2						
35 RIBE SPP	20.0	0.4			2	2						
36 PICE MAR	20.0	0.2			1	2						
POPU BAL	20.0	0.2					1	2				
37 RIBE TRI	20.0	0.2					1	2				
38 RUBU PAR	20.0	0.2	1	2								
39 RIBE OXY	20.0	0.1									.5	3
C LAYER												
40 RUBU PED	100.0	13.0	35	2	3	2	2	2	15	3	10	3
41 LINN BOR	100.0	10.8	5	2	35	2	4	2	5	3	5	3
42 CORN CAN	100.0	10.2	5	2	20	2	8	2	8	3	10	3
43 LYCO ANN	100.0	6.1	15	2	10	2	1	2	4	3	.5	3
44 STRE AMP	80.0	6.2	10	2	7	2	4	2			10	3
45 ARNI COR	80.0	4.6			10	2	12	2	.5	3	.5	3
46 EPIL ANG	80.0	3.8	7	2	1	2	10	2			1	3
47 RUBU PUB	80.0	3.6	5	2	5	2	3	2			5	3
48 PETA PAL	80.0	1.5	1	2			1	2	.5	3	5	3
49 ORTH SEC	80.0	1.2	1	2	1	2	2	2	2	3		
50 STRE ROS	60.0	7.8					4	2	20	3	15	3
51 GYMN DRY	60.0	7.4	35	2			1	2	1	3		
52 PYRO ASA	60.0	5.4	5	2	10	2	12	2				
53 MERT PAN	60.0	2.8	3	2	1	2	10	2				
54 EQUI PRA	60.0	1.8	3	2					5	3	1	3
55 TIAR UNI	40.0	2.6							8	3	5	3
56 HERA LAN	40.0	2.0	8	2			2	2				
57 ACTA RUB	40.0	1.8	8	2			1	2				
58 SMIL RAC	40.0	1.8			2	2	7	2				
59 MITE NUD	40.0	1.2	2	2			4	2				
60 VERA ESC	40.0	1.2							1	3	5	3
61 ASTE CON	40.0	0.8			1	2	3	2				
62 MAIA CAN	40.0	0.7					3	2			5	3
63 ATHY FIL	40.0	0.6	2	2			1	2				
64 EQUI SYL	40.0	0.6	1	2			2	2				
65 PYRO CHL	40.0	0.4	1	2	1	2						
66 ARAL NUD	20.0	1.4					7	2				
67 LATH OCH	20.0	1.0					5	2				
68 RUBU PAA	20.0	1.0					5	2				
69 DELP GLA	20.0	0.6					3	2				
70 VACC CAE	20.0	0.6									3	3
71 ANEM PAR	20.0	0.2					1	2				
72 CORA TRI	20.0	0.2					1	2				
73 EQUI ARV	20.0	0.2					1	2				
74 OSMO PUR	20.0	0.2					1	2				
75 THAL VEN	20.0	0.2					1	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	5	

PINUS CONTORTA/STREPTOPUS AMPLEXIFOLIUS/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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PLOT NUMBER	AVERAGE VALUE		3B F063		3B F060		3B F003		GP 3107		GP 3108	
NUMBER OF SPECIES PER PLOT	51.4		50		42		71		48		46	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
76 VACC VIT	20.0	0.2					1	2				
77 VIOL ORB	20.0	0.2					1	2				
G LAYER												
78 ELYM INN	40.0	1.6			1	2	7	2				
79 CALA STR	40.0	1.0			2	2	3	2				
80 CALA CAN	40.0	0.3							.5	3	1	3
81 CALA INE	20.0	0.6	3	2								
D LAYER												
82 PLEU SCH	100.0	17.6	15	2	20	2	3	2	20	3	30	3
83 PTIL CRI	100.0	7.6	15	2	2	2	1	2	10	3	10	3
84 HYLO SPL	80.0	14.2			10	2	1	2	30	3	30	3
85 POHL NUT	60.0	0.9	2	2	2	2			.5	3		
86 DICR FUS	60.0	0.6					2	2	.5	3	.5	3
87 PLAG MED	40.0	0.8	3	2			1	2				
88 POLY JUN	40.0	0.6	1	2	2	2						
89 BRAC LEI	20.0	1.6					8	2				
90 BRAC STA	20.0	1.0	5	2								
91 DICR SCO	20.0	0.4	2	2								
92 BARB HAT	20.0	0.1							.5	3		
93 JAME AUT	20.0	0.1							.5	3		
94 LEPI REP	20.0	0.1									.5	3
95 PTIL PUL	20.0	0.1							.5	3		
L LAYER												
96 PELT APH	80.0	6.0			2	2	3	2	15	3	10	3
97 CLAD COI	40.0	0.2							.5	3	.5	3
CETR PIN	20.0	0.2	1	2								
98 CETR NIV	20.0	0.1									.5	3
99 CLAD CEN	20.0	0.1									.5	3
100 CLAD CON	20.0	0.1							.5	3		
101 CLAD COR	20.0	0.1									.5	3
102 CLAD GRA	20.0	0.1									.5	3
103 ICMA ERI	20.0	0.1							.5	3		

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY

TITLE : BU 5 PINUS CONTORTA/STREPTOPUS AMPLEXIFOLIUS/PLEUROZIUM SCHREBERI

TABLE 26

		3B	3B	3B	GP	GP
PLOT NUMBER	MEAN	F063	F060	F003	3107	3108
TOWNSHIP & RANGE		60 3	60 3	60 3	61 3	61 3
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L	83L
		1	1	1	8	1
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	1279.0	1210	1220	1260	1370	1335
SLOPE(%)	18.2	25	40	21	0	5
ASPECT(DEG)		66	342	223		330
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		M	M	M	SM	SM
NUTRIENT REGIME		M	M	SM	M	M
OVERLYING MATERIAL		Cmv	Cv	MGb	M	M
UNDERLYING MATERIAL		S	S			
EROSION/DEPOSITION						
SOIL SUBGROUP		O	O	BR	BR	E
SOIL GREAT GROUP		GL	GL	GL	GL	DYB
SOIL DRAINAGE		MW	MW	MW	MW	W
SOLUM THICKNESS(CM)	64.4	82	100	70	30	40
TYPE & DEPTH TO RESTRICT(CM)						
THICKNESS LFH(CM)	6.6	5	6	4	10	8
pH-LFH	3.3				2.8	3.8
-A	4.2	5.5	4.5	4.5	3.7	3.0
-B	4.9	6.0	5.5	4.5	4.3	4.2
-C	6.1	8.0		8.0	4.2	4.3
TEXTURE-A/1		L	SL	SIL	L	SIL
-B/2		SCL	SICL	SIL	CL	CL
-C/3		SC		CL	CL	CL
COARSE FRAGMENTS-B(%)	1.3	1	2	1		
SEEPAGE(*) & MOTTLING(CM)						
ROOTING DEPTH(CM)	38.0	40	43	31		
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	110.5				145	76
CANOPY HEIGHT(M)	17.2	25	4	22	20	15
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	45.0	70	50	40	30	35
-B	25.0	25	15	25	35	25
-C	68.6	70	65	55	69	84
-G	3.4	3	2	10	1	1
-D	48.0	40	35	15	70	80
-L	5.2	1	2	3	10	10
SURFACE SUBST(%)-DEAD WOOD	9.4	5	17	5	15	5
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	90.6	95	83	95	85	95
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	6	

PICEA GLAUCA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 27 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P152		20 5764		20 8646		20 8628		20 5763		GP 4134		20 8530		GP 3109		3B F070		3B F066		GP 3105		3B F113	
NUMBER OF SPECIES PER PLOT	38.7		27		25		37		23		30		48		16		42		44		57		66		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																										
1 PINU CON	66.7	8.5	5	2	13	2	1	2			55	2							15	2	3	2	5	3	5	2
2 PICE ENE	58.3	16.9											25	3	52	2	.5	3	25	2	45	2	15	3	40	2
3 ABIE LAS	41.7	5.4			10	2							5	3			30	3	10	2			10	3		
4 PICE GLA	33.3	13.9	50	2	25	2	45	2	47	2																
5 POPU BAL	8.3	0.1													1	2										
A2 LAYER																										
ABIE LAS	66.7	5.4			15	2	3	2					10	3			10	3	10	2	10	2	5	3	2	2
PICE ENE	50.0	3.6											10	3	3	2			5	2	10	2	5	3	10	2
PICE GLA	33.3	1.5	2	2	3	2	10	2	3	2																
PINU CON	33.3	1.0									5	2									2	2	.5	3	5	2
E LAYER																										
6 HYPO PHY	50.0	1.4											.5	3			.5	3	5	2	5	2	.5	3	5	2
7 CETR HAL	41.7	1.3											.5	3					5	2	5	2	.5	3	5	2
8 CETR PIN	41.7	1.3											.5	3			.5	3	5	2	5	2			5	2
9 PARM HYP	41.7	1.3															.5	3	5	2	5	2	.5	3	5	2
10 USNE ALP	33.3	2.6															.5	3	15	2			.5	3	15	2
11 PARM AMB	33.3	1.3															.5	3	5	2	5	2			5	2
12 BRYO FRE	33.3	1.1																	5	2	3	2	.5	3	5	2
13 PLAT GLA	33.3	0.9											.5	3			.5	3			5	2			5	2
14 USNE SOR	33.3	0.7											.5	3			.5	3			7	2	.5	3		
15 BRYO FUS	33.3	0.3											.5	3			.5	3			2	2	.5	3		
16 PARM SUL	25.0	0.1											.5	3			.5	3					.5	3		
17 USNE SUB	25.0	0.1											.5	3			.5	3					.5	3		
18 BRYO CAP	16.7	0.1															.5	3					.5	3		
19 HYPO TUB	16.7	0.1											.5	3			.5	3								
20 RAMA FAS	16.7	0.1											.5	3									.5	3		
21 USNE SCA	8.3	0.7																			8	2				
22 ALEC SAR	8.3	0.0															.5	3								
23 CETR CHL	8.3	0.0																					.5	3		
24 HYPO ENT	8.3	0.0											.5	3												
25 RAMA THR	8.3	0.0																					.5	3		
B1 LAYER																										
ABIE LAS	58.3	1.3			3	2	1	2			2	2	5	3			.5	3	3	2					1	2
26 ALNU CRI	8.3	0.1																							1	2
PICE GLA	8.3	0.1							1	2																
B2 LAYER																										
ABIE LAS	83.3	7.5			5	2	1	2			12	2	30	3	2	2	20	3	12	2	5	2	.5	3	2	2
27 LONI INV	75.0	4.0	8	2	3	2	6	2	15	2			10	3					1	2	2	2	.5	3	2	2
28 ROSA ACI	75.0	2.4	1	2			4	2	3	2					2	2	5	3	3	2	1	2	5	3	5	2
29 VIBU EDU	75.0	2.3	2	2			1	2					.5	3	2	2	.5	3	3	2	12	2	5	3	2	2
30 RIBE LAC	41.7	1.7					3	2											1	2	5	2	10	3	1	2
31 VACC MEM	33.3	3.1			2	2	2	2			30	2							3	2						
32 SPIR BET	33.3	0.7	1	2													.5	3			2	2	5	3		
ALNU CRI	16.7	0.8	5	2																					4	2
33 RUBU PAR	16.7	0.5	5	2																			.5	3		
34 RIBE OXY	8.3	1.3																					15	3		
35 OPLO HOR	8.3	0.4											5	3												

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	6	

PICEA GLAUCA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE VALUE		3G		20		20		20		20		GP		20		GP		3B		3B		GP		3B	
PLOT NUMBER			P152		5764		8646		8628		5763		4134		8530		3109		F070		F066		3105		F113	
NUMBER OF SPECIES PER PLOT	38.7		27		25		37		23		30		48		16		42		44		57		66		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
36 RUBU IDA	8.3	0.4																							5	2
37 SALI SCO	8.3	0.3									3	2														
38 SHEP CAN	8.3	0.3							4	2																
39 SORB SCO	8.3	0.3			4	2																				
PICE GLA	8.3	0.2							2	2																
POPU BAL	8.3	0.2																					2	3		
40 POPU TRE	8.3	0.2																					2	3		
41 RIBE TRI	8.3	0.2																			2	2				
PICE ENE	8.3	0.1									1	2														
42 RHOD ALB	8.3	0.1																			1	2				
C LAYER																										
43 CORN CAN	91.7	7.4	5	2	10	2	7	2			5	2	10	3	2	2	10	3	15	2	15	2	5	3	5	2
44 LINN BOR	91.7	7.3	2	2	6	2	13	2	1	2	8	2	10	3	3	2	5	3	10	2	20	2			10	2
45 PETA PAL	75.0	2.3	7	2			1	2	3	2			5	3			5	3	4	2	1	2	.5	3	1	2
46 EPIL ANG	66.7	1.2	2	2	1	2	3	2	2	2	1	2									2	2	.5	3	3	2
47 ARNI COR	58.3	2.6	7	2							5	2					5	3	5	2	1	2	5	3	3	2
48 MERT PAN	58.3	1.8	3	2			4	2	4	2									2	2	3	2	5	3	1	2
49 STRE AMP	58.3	1.2			1	2							2	3			2	3	2	2	1	2	5	3	1	2
50 ORTH SEC	58.3	0.8			1	2			2	2	2	2							1	2	1	2	2	3	1	2
51 RUBU PED	50.0	6.5			27	2	3	2					25	3			10	3	8	2					5	2
52 MITE NUD	50.0	1.3	2	2			4	2	1	2											3	2	3	3	3	2
53 FRAG VIR	50.0	0.8	1	2			2	2	1	2									1	2	1	2			3	2
54 LYCO ANN	50.0	0.8			1	2					1	2	3	3			3	3	1	2					1	2
55 PYRO ASA	50.0	0.8	1	2							2	2	.5	3			.5	3					2	3	3	2
56 RUBU PUB	41.7	2.5	3	2			6	2	1	2											15	2	5	3		
57 ACTA RUB	33.3	1.8					5	2											1	2	5	2	10	3		
58 HERA LAN	33.3	1.2					3	2													5	2	5	3	1	2
59 EQUI SCI	33.3	0.4					1	2	2	2											1	2			1	2
60 PYRO CHL	33.3	0.3					1	2			1	2							1	2	1	2				
61 VACC CAE	25.0	1.8									1	2	.5	3			20	3								
62 EQUI PRA	25.0	1.5																			10	2	5	3	3	2
63 EQUI SYL	25.0	0.8			2	2	5	2					2	3												
64 EQUI ARV	25.0	0.7					2	2	5	2											1	2				
65 DELP GLA	25.0	0.3																			1	2	.5	3	2	2
66 GALI TRI	25.0	0.2					1	2													1	2	.5	3		
67 GYMN DRY	16.7	3.2											3	3					35	2						
68 SMIL RAC	16.7	1.9																			8	2	15	3		
69 MAIA CAN	16.7	0.5															5	3					.5	3		
70 ASTE CON	16.7	0.3					1	2													2	2				
71 GERA RIC	16.7	0.3					3	2													1	2				
72 THAL VEN	16.7	0.3																			2	2	2	3		
73 GALI BOR	16.7	0.2					1	2													1	2				
74 LATH OCH	16.7	0.2							2	2													.5	3		
75 MONE UNI	16.7	0.2																	1	2					1	2
76 TIAR TRI	8.3	0.8																	10	2						
77 VIOL CAN	8.3	0.6																			7	2				
78 TIAR UNI	8.3	0.4											5	3												
79 VACC VIT	8.3	0.4																	5	2						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	6	

PICEA GLAUCA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PLOT NUMBER	AVERAGE VALUE		3G		20		20		20		20		GP		20		GP		3B		3B		GP		3B	
			P152		5764		8646		8628		5763		4134		8530		3109		F070		F066		3105		F113	
NUMBER OF SPECIES PER PLOT	38.7		27		25		37		23		30		48		16		42		44		57		66		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
80 OSMO CHI	8.3	0.3																			3	2				
81 STEN OCC	8.3	0.2																					2	3		
82 VIOL RUG	8.3	0.2																					2	3		
83 ASTR AME	8.3	0.1																							1	2
84 CORA TRI	8.3	0.1																			1	2				
85 LIST BOR	8.3	0.1			1	2																				
86 LIST COR	8.3	0.1																			1	2				
87 GERA VIS	8.3	0.0																					.5	3		
G LAYER																										
88 ELYM INN	58.3	1.2					1	2	1	2	1	2			1	2			1	2	5	2			4	2
89 CALA STR	25.0	0.3	1	2			1	2											1	2						
90 CALA CAN	25.0	0.2			1	2																	.5	3	1	2
91 AGRO TRA	8.3	0.1									1	2														
92 CARE SPP	8.3	0.1	1	2																						
93 POLY JUN	8.3	0.1									1	2														
D LAYER																										
94 HYLO SPL	100.0	23.0	26	2	26	2	46	2	2	2	1	2	20	3	65	2	30	3	15	2	5	2	.5	3	40	2
95 PTIL CRI	100.0	21.5	20	2	34	2	19	2	2	2	4	2	20	3	4	2	30	3	40	2	35	2	.5	3	50	2
96 PLEU SCH	100.0	20.5	2	2	31	2	25	2	1	2	33	2	20	3	6	2	40	3	35	2	50	2	.5	3	2	2
97 DICR SCO	33.3	1.0	1	2							1	2			7	2			3	2						
POLY JUN	33.3	0.5			1	2			4	2									1	2			.5	3		
98 DICR FUS	33.3	0.3									1	2	.5	3			.5	3							1	2
99 RHYT TRI	16.7	0.5													1	2					5	2				
100 ANAS HEL	16.7	0.1															.5	3					.5	3		
101 JAME AUT	16.7	0.1											.5	3									.5	3		
102 MNIU SPI	16.7	0.1	1	2																			.5	3		
103 PTIL PUL	16.7	0.1															.5	3					.5	3		
104 PELT APH	8.3	0.8											10	3												
105 DICR POL	8.3	0.2			2	2																				
106 MNIU AFF	8.3	0.1					1	2																		
107 PLAG MED	8.3	0.1																			1	2				
108 POHL NUT	8.3	0.1									1	2														
109 TIMM AUS	8.3	0.1													1	2										
110 BRAC SAL	8.3	0.0																					.5	3		
111 DICR FLA	8.3	0.0											.5	3												
112 EURH PUL	8.3	0.0																					.5	3		
113 LOPH LON	8.3	0.0															.5	3								
114 PLAG CUS	8.3	0.0																					.5	3		
115 POLY COM	8.3	0.0											.5	3												
L LAYER																										
PELT APH	50.0	1.6					1	2			1	2			4	2	10	3	3	2			.5	3		
116 CLAD CHL	25.0	0.2									1	2	.5	3			.5	3								
117 CLAD MIT	25.0	0.2	1	2							1	2	.5	3												
118 CLAD CEN	25.0	0.1											.5	3			.5	3					.5	3		
119 CLAD COI	16.7	0.1											.5	3									.5	3		
120 CLAD CON	16.7	0.1											.5	3			.5	3								
121 CLAD COR	16.7	0.1									1	2	.5	3												
122 CLAD ECM	8.3	0.1									1	2														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	6	

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PICEA GLAUCA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		3G P152		20 5764		20 8646		20 8628		20 5763		GP 4134		20 8530		GP 3109		3B F070		3B F066		GP 3105		3B F113	
NUMBER OF SPECIES PER PLOT	38.7		27		25		37		23		30		48		16		42		44		57		66		49	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
123 DACT ARC	8.3	0.1																	1	2						
124 PELT CAN	8.3	0.1																							1	2
PLAT GLA	8.3	0.1																							1	2
BRYO CAP	8.3	0.0											.5	3												
125 CLAD PHY	8.3	0.0											.5	3												
126 HYPO AUS	8.3	0.0											.5	3												

University of Alberta

ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 27

TITLE : BU 6 PICEA GLAUCA/HYLOCOMIUM SPLENDENS

		3G	20	20	20	20	GP	20	GP	3B	3B	GP	3B
PLOT NUMBER	MEAN	P152	5764	8646	8628	5763	4134	8530	3109	F070	F066	3105	F113
TOWNSHIP & RANGE		6512	62 8	62 8	5913	6210	62 2	6113	61 2	58 5	59 6	61 3	58 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 12	83L 6	83L 6	83L 4	83L 6	83L 8	83L 5	83 L 0	83L 2	83L 2	83L 8	83L 2
PHYSIOGRAPHIC SUBREGION													
GEOMORPHIC SYSTEM													
ECOSECTION													
ELEVATION(MASL)	1284.5	1105	1180	1480	1360	1430	1120	1180	1275	1300	1290		1410
SLOPE(%)	21.3	8	18	8	0	36	7	47	19	34	20	36	22
ASPECT(DEG)		31	334	128		268	210	306	250	287	90	250	95
ENVIRONMENT/SOILS :													
ECOLOGICAL MOISTURE REGIME		HG	SHG	SHG	HG	M	M	M	M	M	SHG	SHG	M
NUTRIENT REGIME		PM					M		M	M	M	M	E
OVERLYING MATERIAL		Mv	CM	M	F	C	M	C		MGv	Cv	M	Cv
UNDERLYING MATERIAL		R1								S	R		S
EROSION/DEPOSITION		W											
SOIL SUBGROUP		H					E		E	O	O	D	O
SOIL GREAT GROUP		LG					DYB		DYB	GL	R	GL	EB
SOIL DRAINAGE		I	MW	MW	MW	W	W	W	W	MW	MW	MW	MW
SOLUM THICKNESS(CM)	36.7	31					55		35	65	11	33	27
TYPE & DEPTH TO RESTRICT(CM)		W 50								W 57			B 27
THICKNESS LFH(CM)	8.6	5					6		12	7	11	10	9
pH-LFH	3.6						3.6					3.6	
-A	5.8	8.0					3.4		4.5	5.5		5.2	8.0
-B	6.2	8.0					4.2		5.0	6.0		6.0	8.0
-C	7.0	8.0					4.8		7.0	7.0	7.5	6.5	8.0
TEXTURE-A/1		SIC					SIL		SIL	SIL		L	
-B/2		CL					L		SL	SCL		CL	SL
-C/3		SICL					L		CL		L	CL	SL
COARSE FRAGMENTS-B(%)	8.0						2		10	10			10
SEEPAGE(*) & MOTTLING(CM)		* 18								*			
ROOTING DEPTH(CM)	33.4						51			26	30	20	40
VEGETATION :													
ASSOCIATION													
STAND AGE(YR)	142.4	111	139		285	84	74		202			102	
CANOPY HEIGHT(M)	24.4	26	39		30	18	18	27	17	26	22	20	25
MEAN ANNUAL INCREMENT	0.0												
STRATA COVERAGE(%)-A	52.7	50	20	60	50	60	50	65	40	65	70	40	62
-B	23.8	15	20	15	25	40	45	5	45	15	20	40	0
-C	43.3	25	35	55	30	20	60	5	45	70	70	74	30
-G	1.5	0	1	1	0	2	0	1	0	2	5	1	5
-D	72.7	50	95	85	10	35	80	81	95	86	95	60	90
-L	3.7	1	0	1	0	5	10	4	5	4	3	10	1
SURFACE SUBST(%)-DEAD WOOD	9.8	2	5	12	10	3	5	8	25	10	5	25	7
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	3.3	0	0	0	40	0	0	0	0	0	0	0	0
-ORGANIC	86.9	98	95	88	50	97	95	92	75	90	95	75	93
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0												
-GRAMINOIDS	0.0												
-BROWSE	0.0												

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	7	

PICEA MARIANA-PINUS CONTORTA/LEDUM GRO-VACCINIUM MEM/HYLOCOMIUM

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 28 PAGE 1

	AVERAGE		3B		20		20		20		3G	
PLOT NUMBER	VALUE		F004		8537		8529		7476		P190	
NUMBER OF SPECIES PER PLOT	30.2		34		24		26		38		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER												
1 PICE MAR	100.0	28.0	30	2	40	2	30	2	20	2	20	2
2 PINU CON	100.0	11.0	30	2	5	2	13	2	2	2	5	2
3 ABIE LAS	20.0	1.4			7	2						
4 PICE GLA	20.0	0.2									1	2
A2 LAYER												
PICE MAR	100.0	8.4	2	2	5	2	10	2	10	2	15	2
PINU CON	60.0	2.2	1	2			2	2	8	2		
ABIE LAS	20.0	0.6			3	2						
PICE GLA	20.0	0.2									1	2
E LAYER												
5 BRYO FUS	20.0	1.0	5	2								
6 CETR HAL	20.0	1.0	5	2								
7 PARM HYP	20.0	1.0	5	2								
8 USNE SOR	20.0	1.0	5	2								
B1 LAYER												
PICE MAR	80.0	1.8	1	2	1	2	5	2	2	2		
ABIE LAS	20.0	0.2			1	2						
B2 LAYER												
9 LEDU GRO	100.0	14.4	7	2	10	2	15	2	20	2	20	2
PICE MAR	80.0	1.8	2	2	1	2	4	2	2	2		
10 ROSA ACI	80.0	1.4			2	2	3	2	1	2	1	2
11 VACC MEM	60.0	4.8	12	2	7	2					5	2
12 VACC MYR	60.0	1.6	4	2			3	2	1	2		
13 SALI BAR	20.0	1.4							7	2		
14 LONI INV	20.0	1.2									6	2
ABIE LAS	20.0	0.6			3	2						
15 SALI MYR	20.0	0.6							3	2		
16 RIBE LAC	20.0	0.2			1	2						
17 SALI BEB	20.0	0.2									1	2
C LAYER												
18 CORN CAN	100.0	7.4	5	2	2	2	18	2	9	2	3	2
19 VACC VIT	100.0	5.2	2	2	7	2	8	2	7	2	2	2
20 LINN BOR	80.0	1.2	2	2			2	2	1	2	1	2
21 VACC CAE	80.0	1.0	2	2			1	2	1	2	1	2
22 LYCO ANN	60.0	0.8	2	2	1	2					1	2
23 PETA PAL	60.0	0.8	1	1					2	2	1	2
24 EQUI SYL	40.0	0.8	3	2							1	2
25 EQUI SCI	40.0	0.4			1	2			1	2		
26 MERT PAN	40.0	0.4							1	2	1	2
27 GAUL HIS	20.0	2.0	10	2								
28 LYCO COM	20.0	1.4	7	2								
29 ORTH SEC	20.0	0.6	3	2								
30 RUBU PED	20.0	0.4	2	2								
31 ACHI MIL	20.0	0.2							1	2		
32 ANEM PAR	20.0	0.2							1	2		
33 ARNI COR	20.0	0.2							1	2		
34 EPIL ANG	20.0	0.2									1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	7	

PICEA MARIANA-PINUS CONTORTA/LEDUM GRO-VACCINIUM MEM/HYLOCOMIUM

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 28 PAGE 2

	AVERAGE VALUE		3B		20		20		20		3G	
PLOT NUMBER			F004		8537		8529		7476		P190	
NUMBER OF SPECIES PER PLOT	30.2		34		24		26		38		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
35 EQUI PRA	20.0	0.2									1	2
36 FRAG VIR	20.0	0.2							1	2		
37 GALI BOR	20.0	0.2							1	2		
38 MITE NUD	20.0	0.2									1	2
39 PARN PAL	20.0	0.2							1	2		
40 VIOL ORB	20.0	0.2							1	2		
G LAYER												
41 ELYM INN	40.0	0.4					1	2	1	2		
42 CALA INE	20.0	0.2									1	2
D LAYER												
43 HYLO SPL	100.0	44.2	40	2	63	2	24	2	15	2	79	2
44 PTIL CRI	80.0	14.2	30	2	22	2	8	2			11	2
45 PLEU SCH	80.0	12.8	20	2	5	2	38	2	1	2		
46 DICR SCO	80.0	1.2			1	2	3	2	1	2	1	2
47 DICR POL	60.0	0.6			1	2	1	2	1	2		
48 AULA PAL	40.0	2.0							9	2	1	2
49 DICR FUS	40.0	0.8	2	2					2	2		
50 POLY JUN	40.0	0.8	3	2			1	2				
51 POHL NUT	20.0	0.2					1	2				
52 POLY STR	20.0	0.2									1	2
L LAYER												
53 PELT APH	100.0	4.4	8	2	6	2	2	2	5	2	1	2
54 PELT MAL	80.0	2.6	2	2	2	2	8	2	1	2		
55 CLAD MIT	60.0	1.2	2	2			2	2	2	2		
56 STER TOM	40.0	2.0	1	2					9	2		
57 CLAD RAN	40.0	0.8	2	2			2	2				
58 CLAD COR	20.0	1.8							9	2		
59 CLAD GRA	20.0	1.8							9	2		
60 CLAD CRI	20.0	0.2									1	2
61 CLAD STE	20.0	0.2					1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : BU 7 PICEA MARIANA-PINUS CONTORTA/LEDUM GRO-VACCINIUM MEM/HYLOCOMIUM TABLE 28

		3B	20	20	20	3G
PLOT NUMBER	MEAN	F004	8537	8529	7476	P190
TOWNSHIP & RANGE		60 3	62 7	6113	6312	6514
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L	83L
		1	7	5	5	12
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	1208.0	1250	1240	1140	1230	1180
SLOPE(%)	6.0	8	4	5	1	12
ASPECT(DEG)		16	286	290	240	200
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		SHG	M	SM	M	SHG
NUTRIENT REGIME		M				SM
OVERLYING MATERIAL		MGb	M	M	M	M1
UNDERLYING MATERIAL						
EROSION/DEPOSITION						
SOIL SUBGROUP		O				E
SOIL GREAT GROUP		LG				DYB
SOIL DRAINAGE		I	W	W	W	MW
SOLUM THICKNESS(CM)	47.5	61				34
TYPE & DEPTH TO RESTRICT(CM)						B200
THICKNESS LFH(CM)	5.5	2				9
pH-LFH	0.0					
-A	4.3	4.5				4.0
-B	5.3	6.5				4.0
-C	7.0	8.0				6.0
TEXTURE-A/1		LS				LS
-B/2		SCL				LS
-C/3		CL				SCL
COARSE FRAGMENTS-B(%)	15.5	1				30
SEEPAGE(*) & MOTTLING(CM)		25				
ROOTING DEPTH(CM)	38.0	38				
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	183.0					183
CANOPY HEIGHT(M)	18.0	16				20
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	51.0	60	60	55	40	40
-B	25.4	25	17	25	30	30
-C	22.0	25	20	25	30	10
-G	0.4	0	0	1	0	1
-D	70.8	80	87	82	10	95
-L	14.8	15	8	13	35	3
SURFACE SUBST(%)-DEAD WOOD	7.0	3	10	10	2	10
-BEDROCK	0.0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0
-ORGANIC	93.0	97	90	90	98	90
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	8	

PICEA MARIANA/RUBUS CHAMAEMORUS/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 29 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 8538		38 F061		20 8535		20 8516		20 4582		20 8567	
NUMBER OF SPECIES PER PLOT	31.7		38		31		35		29		32		25	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER														
1 PICE MAR	100.0	24.3	25	2	10	2	17	2	32	2	31	2	31	2
2 PICE ENE	16.7	1.2									7	2		
3 LARI LAR	16.7	0.5			3	2								
4 PINU CON	16.7	0.3	2	2										
A2 LAYER														
PICE MAR	83.3	5.8	5	2			8	2	10	2	7	2	5	2
PICE ENE	16.7	0.3									2	2		
E LAYER														
5 USNE SPP	16.7	2.5			15	2								
6 BRYO SPP	16.7	0.8			5	2								
7 CETR PIN	16.7	0.8			5	2								
8 HYPO PHY	16.7	0.8			5	2								
B1 LAYER														
PICE MAR	100.0	4.5	5	2	5	2	5	2	2	2	5	2	5	2
LARI LAR	16.7	0.2			1	2								
B2 LAYER														
9 BETU GLA	83.3	7.8	7	2	5	2	3	2	2	2			30	2
10 LEDU GRO	66.7	13.3	15	2	30	2	20	2					15	2
PICE MAR	66.7	3.0	6	2	5	2	5	2			2	2		
11 LONI INV	66.7	1.5	1	2			2	2	5	2	1	2		
12 SALI BAR	50.0	4.8					5	2	4	2	20	2		
13 SALI MYR	33.3	1.2			2	2	5	2						
14 SALI PLA	16.7	1.7	10	2										
15 SALI SPP	16.7	1.3									8	2		
16 SALI PED	16.7	1.2											7	2
17 SALI FAR	16.7	0.8					5	2						
18 ROSA ACI	16.7	0.7					4	2						
19 SALI GLA	16.7	0.7							4	2				
20 BETU PUM	16.7	0.5							3	2				
LARI LAR	16.7	0.2			1	2								
C LAYER														
21 VACC VIT	100.0	2.5	2	2	3	2	3	2	3	2	2	2	2	2
22 EQUI SCI	83.3	1.8	2	2	3	2	1	2	3	2			2	2
23 PETA PAL	83.3	1.5	1	2			3	2	3	2	1	2	1	2
24 MITE NUD	83.3	1.0	1	2	1	2	1	2	1	2	2	2		
25 EQUI ARV	66.7	8.7	1	2	25	2	7	2			19	2		
26 RUBU CHA	50.0	3.3	7	2							9	2	4	2
27 OXYC MIC	50.0	1.3	2	2	5	2							1	2
28 VACC CAE	50.0	1.3	1	2			5	2	2	2				
29 CORN CAN	50.0	1.2	2	2			3	2					2	2
30 SMIL TRI	50.0	1.2	5	2							1	2	1	2
31 LINN BOR	50.0	0.7	1	2			2	2			1	2		
32 ACHI MIL	50.0	0.5	1	2			1	2	1	2				
33 EQUI SYL	33.3	0.8							3	2	2	2		
34 EMPE NIG	33.3	0.7					3	2			1	2		
35 GALI BOR	33.3	0.5					2	2	1	2				
36 RUBU ARC	33.3	0.3							1	2			1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	8	

PICEA MARIANA/RUBUS CHAMAEMORUS/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE VALUE		20		38		20		20		20		20	
PLOT NUMBER			8538		F061		8535		8516		4582		8567	
NUMBER OF SPECIES PER PLOT	31.7		38		31		35		29		32		25	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
37 ARCT RUB	16.7	1.0					6	2						
38 GAUL HIS	16.7	0.5			3	2								
39 ANDR POL	16.7	0.2											1	2
40 ANEM PAR	16.7	0.2					1	2						
41 ASTE CON	16.7	0.2					1	2						
42 DELP GLA	16.7	0.2							1	2				
43 FRAG VIR	16.7	0.2					1	2						
44 LIST BOR	16.7	0.2									1	2		
45 MERT PAN	16.7	0.2							1	2				
46 MONE UNI	16.7	0.2									1	2		
47 ORTH SEC	16.7	0.2									1	2		
48 PEDI BRA	16.7	0.2					1	2						
49 PEDI LAB	16.7	0.2					1	2						
50 PETA SAG	16.7	0.2									1	2		
51 POTE PAL	16.7	0.2	1	2										
52 VIOL ORB	16.7	0.2					1	2						
G LAYER														
53 CARE VAG	83.3	1.7	1	2	1	2			1	2	6	2	1	2
54 CARE AQU	50.0	2.8	12	2	2	2							3	2
55 CARE GYN	50.0	1.3	1	2	1	2					6	2		
56 ELYM INN	33.3	1.0					3	2	3	2				
57 CARE TEN	33.3	0.3	1	2									1	2
58 CARE DIS	16.7	0.7									4	2		
59 CARE PAP	16.7	0.3	2	2										
60 CARE SPP	16.7	0.3					2	2						
61 CALA CAN	16.7	0.2	1	2										
62 CALA STR	16.7	0.2											1	2
63 CARE ROT	16.7	0.2	1	2										
D LAYER														
64 HYLO SPL	100.0	27.2	17	2	2	2	46	2	15	2	42	2	41	2
65 AULA PAL	100.0	4.8	5	2	2	2	5	2	1	2	10	2	6	2
66 TOME NIT	83.3	9.7	14	2	5	2	25	2	6	2	8	2		
67 PTIL CRI	66.7	7.8	2	2					31	2	9	2	5	2
68 PLEU SCH	66.7	7.3	9	2	2	2			19	2			14	2
69 SPHA WAR	50.0	6.7							3	2	11	2	26	2
70 SPHA FUS	16.7	14.2			85	2								
71 SPHA RUS	16.7	8.7	52	2										
72 SPHA ANG	16.7	3.3	20	2										
73 RHIZ PSE	16.7	1.3									8	2		
74 POLY STR	16.7	0.3			2	2								
75 BRAC MIL	16.7	0.2									1	2		
L LAYER														
76 PELT APH	50.0	1.0	1	2			4	2	1	2				
77 PELT MAL	50.0	0.5	1	2					1	2			1	2
78 CLAD MIT	16.7	0.3			2	2								
79 CLAD SPP	16.7	0.2			1	2								
80 ICMA ERI	16.7	0.2			1	2								

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 29

TITLE : BU 8 PICEA MARIANA/RUBUS CHAMAEMORUS/SPHAGNUM SPP

PLOT NUMBER	MEAN	20 8538	3B F061	20 8535	20 8516	20 4582	20 8567
TOWNSHIP & RANGE		62 7	60 3	6312	62 6	6310	67 7
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 7	83L 1	83L 5	83L 7	83L 7	83L 7
PHYSIOGRAPHIC SUBREGION							
GEOMORPHIC SYSTEM							
ECOSECTION							
ELEVATION(MASL)	1248.3	1210	1090	1230	1160	1400	1400
SLOPE(%)	2.3	0	0	3	9	2	0
ASPECT(DEG)				308	132		
ENVIRONMENT/SOILS :							
ECOLOGICAL MOISTURE REGIME		HG	SHG	SHG	HG	SHD	SHD
NUTRIENT REGIME							
OVERLYING MATERIAL		M	Ov	MQ	MQ	M	MQ
UNDERLYING MATERIAL			M				
EROSION/DEPOSITION							
SOIL SUBGROUP			R				
SOIL GREAT GROUP			G				
SOIL DRAINAGE		I	P	MW	I	P	P
SOLUM THICKNESS(CM)	60.0		60				
TYPE & DEPTH TO RESTRICT(CM)							
THICKNESS LFH(CM)	60.0		60				
pH-LFH	0.0						
-A	0.0						
-B	0.0						
-C	0.0						
TEXTURE-A/1			f				
-B/2							
-C/3			SiC				
COARSE FRAGMENTS-B(%)	0.0						
SEEPAGE(*) & MOTTLING(CM)							
ROOTING DEPTH(CM)	0.0						
VEGETATION :							
ASSOCIATION							
STAND AGE(YR)	157.3		166		110	162	191
CANOPY HEIGHT(M)	15.0	14	9	9	18	24	16
MEAN ANNUAL INCREMENT	0.0						
STRATA COVERAGE(%)-A	31.0	30	1	25	45	50	35
-B	36.7	35	35	50	20	35	45
-C	26.7	20	30	25	15	50	20
-G	6.3	15	2	5	1	15	0
-D	92.2	93	92	86	97	90	95
-L	2.2	2	4	4	2	0	1
SURFACE SUBST(%)-DEAD WOOD	2.2	3	1	2	2	3	2
-BEDROCK	0.0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0
-ORGANIC	94.8	94	96	98	98	90	93
-OPEN WATER	2.3	3	3	0	0	3	5
BIOMASS(KG/HA)-FORBS	0.0						
-GRAMINOIDS	0.0						
-BROWSE	0.0						

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	9	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 30 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 8596		20 7494		20 8636	
NUMBER OF SPECIES PER PLOT	20.3		20		20		21	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
A1 LAYER								
1 LARI LAR	33.3	1.3			4	2		
2 PICE MAR	33.3	0.3			1	2		
B1 LAYER								
LARI LAR	66.7	6.7			15	2	5	2
PICE MAR	33.3	0.3	1	2				
B2 LAYER								
3 BETU GLA	100.0	44.0	40	2	35	2	57	2
LARI LAR	66.7	7.7			18	2	5	2
4 SALI PLA	33.3	6.7	20	2				
5 LEDU GRO	33.3	4.0					12	2
6 SALI MYR	33.3	3.3	10	2				
PICE MAR	33.3	0.7			2	2		
C LAYER								
7 SMIL TRI	66.7	3.3			8	2	2	2
8 GEUM RIV	66.7	3.0	8	2			1	2
9 VACC VIT	66.7	2.0			2	2	4	2
10 RUBU ARC	66.7	1.3	3	2			1	2
11 MITE NUD	66.7	1.0	2	2	1	2		
12 OXYC MIC	66.7	1.0			2	2	1	2
13 ACHI MIL	33.3	0.3	1	2				
14 DELP GLA	33.3	0.3	1	2				
15 EQUI HYE	33.3	0.3			1	2		
16 GALI TRI	33.3	0.3			1	2		
17 MERT PAN	33.3	0.3	1	2				
18 VALE DIO	33.3	0.3	1	2				
G LAYER								
19 CARE AQU	66.7	3.3			9	2	1	2
20 CALA INE	66.7	1.7	2	2			3	2
21 CARE DIS	66.7	1.7	3	2			2	2
22 CARE PAP	66.7	1.0			2	2	1	2
23 CARE GYN	33.3	1.0			3	2		
24 CARE VAG	33.3	1.0	3	2				
25 DESC CES	33.3	0.7			2	2		
26 CARE BRU	33.3	0.3					1	2
27 CARE TEN	33.3	0.3					1	2
D LAYER								
28 AULA PAL	100.0	16.0	25	2	3	2	20	2
29 TOME NIT	66.7	10.3	15	2	16	2		
30 SPHA ANG	33.3	26.0			78	2		
31 SPHA WAR	33.3	16.0	48	2				
32 SPHA FUS	33.3	15.0					45	2
33 SPHA TER	33.3	6.3					19	2
34 POLY JUN	33.3	2.0					6	2
35 RHIZ GRA	33.3	1.3					4	2
36 DICR SCO	33.3	0.7			2	2		
37 PLAG ELL	33.3	0.3	1	2				
38 POLY STR	33.3	0.3					1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	9	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 30 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8596		20 7494		20 8636	
NUMBER OF SPECIES PER PLOT	20.3		20		20		21	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
39 THUI REC	33.3	0.3	1	2				
L LAYER								
40 PELT MAL	33.3	0.3	1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : BU 9 BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP TABLE 30

PLOT NUMBER	MEAN	20 8596	20 7494	20 8636
TOWNSHIP & RANGE		62 6	59 3	59 1
MERIDIAN		W 6	W 6	W 6
MAPSHEET		83L 7	83L 1	83L 1
PHYSIOGRAPHIC SUBREGION				
GEOMORPHIC SYSTEM				
ECOSECTION				
ELEVATION(MASL)	1260.0	1210	1290	1280
SLOPE(%)	0.7	2	0	0
ASPECT(DEG)		262		
ENVIRONMENT/SOILS :				
ECOLOGICAL MOISTURE REGIME		HG	HG	SHG
NUTRIENT REGIME				
OVERLYING MATERIAL		MQ	F	QF
UNDERLYING MATERIAL				
EROSION/DEPOSITION				
SOIL SUBGROUP				
SOIL GREAT GROUP				
SOIL DRAINAGE		I	P	P
SOLUM THICKNESS(CM)	0.0			
TYPE & DEPTH TO RESTRICT(CM)				
THICKNESS LFH(CM)	0.0			
pH-LFH	0.0			
-A	0.0			
-B	0.0			
-C	0.0			
TEXTURE-A/1				
-B/2				
-C/3				
COARSE FRAGMENTS-B(%)	0.0			
SEEPAGE(*) & MOTTLING(CM)				
ROOTING DEPTH(CM)	0.0			
VEGETATION :				
ASSOCIATION				
STAND AGE(YR)	0.0			
CANOPY HEIGHT(M)	0.0			
MEAN ANNUAL INCREMENT	0.0			
STRATA COVERAGE(%)-A	1.7	0	5	0
-B	71.7	70	65	80
-C	11.7	20	10	5
-G	9.3	5	15	8
-D	93.3	90	95	95
-L	0.3	1	0	0
SURFACE SUBST(%)-DEAD WOOD	1.0	0	1	2
-BEDROCK	0.0	0	0	0
-STONES	0.0	0	0	0
-MIN.SOIL	0.0	0	0	0
-ORGANIC	98.0	97	99	98
-OPEN WATER	0.0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0			
-GRAMINOIDS	0.0			
-BROWSE	0.0			

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	10	

DRY MEADOW-FLUVIAL

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 31 PAGE 1

	AVERAGE		20		20		20		20	
PLOT NUMBER	VALUE		8597		8508		8541		7496	
NUMBER OF SPECIES PER PLOT	23.0		21		21		11		39	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 PICE GLA	25.0	0.3							1	2
B2 LAYER										
2 BETU GLA	50.0	23.8					70	2	25	2
3 SALI MYR	50.0	17.5					30	2	40	2
4 SALI ATH	25.0	2.5							10	2
5 SALI DRU	25.0	2.5							10	2
6 PICE MAR	25.0	0.5							2	2
C LAYER										
7 THAL VEN	100.0	5.0	3	2	10	2	1	2	6	2
8 MERT PAN	100.0	3.5	2	2	7	2	1	2	4	2
9 DELP GLA	100.0	2.5	3	2	4	2	1	2	2	2
10 ACHI MIL	100.0	2.0	2	2	4	2	1	2	1	2
11 FRAG VIR	100.0	2.0	2	2	2	2	1	2	3	2
12 GALI BOR	75.0	1.5	1	2	3	2			2	2
13 VALE DIO	50.0	2.0	3	2					5	2
14 VICI AME	50.0	2.0			7	2	1	2		
15 EPIL ANG	50.0	1.0					1	2	3	2
16 POLE PUL	50.0	0.8	2	2					1	2
17 SENE IND	50.0	0.5	1	2					1	2
18 SOLI CAN	50.0	0.5			1	2	1	2		
19 GEUM TRI	25.0	4.5	18	2						
20 GEUM RIV	25.0	3.0							12	2
21 ASTE PUN	25.0	1.0							4	2
22 SMIL STE	25.0	0.8							3	2
23 STEL LOG	25.0	0.8	3	2						
24 ASTE CON	25.0	0.5							2	2
25 MITE NUD	25.0	0.5							2	2
26 PETA SAG	25.0	0.5							2	2
27 RUBU ARC	25.0	0.5	2	2						
28 CERA SPP	25.0	0.3			1	2				
29 GENT AMA	25.0	0.3			1	2				
30 GEUM ALE	25.0	0.3			1	2				
31 POLY VIV	25.0	0.3							1	2
32 POTE GRA	25.0	0.3			1	2				
33 SMIL TRI	25.0	0.3							1	2
34 STEL LON	25.0	0.3							1	2
35 TARA OFF	25.0	0.3			1	2				
G LAYER										
36 CARE AQU	75.0	2.0	1	2	5	2			2	2
37 BROM INE	50.0	6.0	9	2	15	2				
38 AGRO TRA	50.0	3.0	4	2	8	2				
39 ELYM INN	50.0	1.0			1	2	3	2		
40 CARE PRA	25.0	1.3			5	2				
41 CARE SCI	25.0	1.0	4	2						
42 CARE SPP	25.0	1.0	4	2						
43 POA PAL	25.0	1.0			4	2				
44 SCHI PUR	25.0	1.0			4	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	10	

DRY MEADOW-FLUVIAL

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 31 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8597		20 8508		20 8541		20 7496	
NUMBER OF SPECIES PER PLOT	23.0		21		21		11		39	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
45 CARE GYN	25.0	0.5							2	2
46 POA COM	25.0	0.5	2	2						
47 CARE PAP	25.0	0.3							1	2
48 DESC CES	25.0	0.3							1	2
49 JUNC BAL	25.0	0.3							1	2
50 LUZU PAR	25.0	0.3							1	2
51 PHLE COM	25.0	0.3	1	2						
D LAYER										
52 CLIM DEN	50.0	2.3	5	2					4	2
53 SPHA ANG	25.0	3.0							12	2
54 SPHA WAR	25.0	2.5							10	2
55 AULA PAL	25.0	2.0							8	2
56 PLAG ELL	25.0	1.3	5	2						
57 BRYU PSE	25.0	1.0							4	2
58 MNIU AFF	25.0	0.8							3	2
59 BRAC SPP	25.0	0.3			1	2				
60 HYPN PRA	25.0	0.3							1	2
61 TOME NIT	25.0	0.3							1	2

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 31

TITLE : BU 10 DRY MEADOW-FLUVIAL

PLOT NUMBER	MEAN	20 8597	20 8508	20 8541	20 7496
TOWNSHIP & RANGE		63 6	6110	6110	59 3
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L 7	83L 6	83L 6	83L 1
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	1206.3	1210	1200	1180	1235
SLOPE(%)	0.8	2	0	0	1
ASPECT(DEG)		262			186
ENVIRONMENT/SOILS					
ECOLOGICAL MOISTURE REGIME		SHG	SHG	SHD	HG
NUTRIENT REGIME					
OVERLYING MATERIAL		MQ	F	M	F
UNDERLYING MATERIAL					
EROSION/DEPOSITION					
SOIL SUBGROUP					
SOIL GREAT GROUP					
SOIL DRAINAGE		MW		P	I
SOLUM THICKNESS(CM)	0.0				
TYPE & DEPTH TO RESTRICT(CM)					
THICKNESS LFH(CM)	0.0				
pH-LFH	0.0				
-A	0.0				
-B	0.0				
-C	0.0				
TEXTURE-A/1					
-B/2					
-C/3					
COARSE FRAGMENTS-B(%)	0.0				
SEEPAGE(*) & MOTTLING(CM)					
ROOTING DEPTH(CM)	0.0				
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	0.0				
CANOPY HEIGHT(M)	0.0				
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	0.3	0	0	0	1
-B	43.8	0	0	90	85
-C	38.8	50	50	5	50
-G	30.0	50	50	5	15
-D	10.3	0	1	0	40
-L	0.0	0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	1.0	1	1	1	1
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	12.5	0	0	50	0
-ORGANIC	86.3	99	99	49	98
-OPEN WATER	0.3	0	0	0	1
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	11	

POPULUS TREMULOIDES/SHEPHERDIA CANADENSIS/ASTER CONSPICUUS

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 32 PAGE 1

	AVERAGE		20		3G	
PLOT NUMBER	VALUE		8544		P151	
NUMBER OF SPECIES PER PLOT	34.5		49		20	
SPECIES	%P	MC	%C	SV	%C	SV
A1 LAYER						
1 POPU TRE	100.0	22.5	5	2	40	2
2 PINU CON	50.0	3.5	7	2		
A2 LAYER						
POPU TRE	100.0	10.0	10	2	10	2
PINU CON	50.0	6.0	12	2		
3 PICE ENE	50.0	1.5	3	2		
4 SALI BEB	50.0	1.0			2	2
B1 LAYER						
POPU TRE	50.0	2.5	5	2		
PINU CON	50.0	1.5	3	2		
B2 LAYER						
5 SHEP CAN	100.0	8.5	7	2	10	2
6 ROSA ACI	100.0	3.5	3	2	4	2
7 AMEL ALN	50.0	4.0			8	2
8 SALI SCO	50.0	4.0	8	2		
9 VACC MYR	50.0	3.0	6	2		
10 LEDU GRO	50.0	2.5	5	2		
11 SPIR BET	50.0	0.5			1	2
C LAYER						
12 ASTE CON	100.0	8.5	3	2	14	2
13 VACC VIT	100.0	4.0	6	2	2	2
14 LATH OCH	100.0	3.0	1	2	5	2
15 CAST MIN	100.0	1.5	1	2	2	2
16 FRAG VIR	100.0	1.0	1	2	1	2
17 VICI AME	50.0	2.5			5	2
18 CORN CAN	50.0	2.0	4	2		
19 ARCT UVA	50.0	1.5	3	2		
20 ARAL NUD	50.0	1.0			2	2
21 DISP TRA	50.0	1.0			2	2
22 CLEM OCC	50.0	0.5			1	2
23 GALI BOR	50.0	0.5			1	2
24 HIER UMB	50.0	0.5			1	2
25 LINN BOR	50.0	0.5	1	2		
26 LYCO COM	50.0	0.5	1	2		
27 MERT PAN	50.0	0.5	1	2		
28 PEDI LAB	50.0	0.5	1	2		
29 PETA PAL	50.0	0.5	1	2		
30 VACC CAE	50.0	0.5	1	2		
G LAYER						
31 ELYM INN	100.0	10.5	2	2	19	2
32 AGRO SCA	50.0	0.5	1	2		
33 CALA CAN	50.0	0.5	1	2		
34 CALA STR	50.0	0.5	1	2		
D LAYER						
35 PLEU SCH	50.0	3.0	6	2		
36 HYLO SPL	50.0	1.5	3	2		
37 AMBL SER	50.0	0.5	1	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	BU	11	

POPULUS TREMULOIDES/SHEPHERDIA CANADENSIS/ASTER CONSPICUUS

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 32 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8544		3G P151	
NUMBER OF SPECIES PER PLOT	34.5		49		20	
SPECIES	%P	MC	%C	SV	%C	SV
38 DICR ACU	50.0	0.5	1	2		
39 DICR POL	50.0	0.5	1	2		
40 DREP UNC	50.0	0.5	1	2		
41 POHL NUT	50.0	0.5	1	2		
42 POLY JUN	50.0	0.5	1	2		
43 PYLA POL	50.0	0.5			1	2
L LAYER						
44 CLAD MIT	50.0	3.0	6	2		
45 CLAD GRA	50.0	1.0	2	2		
46 STER TOM	50.0	1.0	2	2		
47 CETR CUC	50.0	0.5	1	2		
48 CETR ISL	50.0	0.5	1	2		
49 CLAD COC	50.0	0.5	1	2		
50 CLAD COR	50.0	0.5	1	2		
51 CLAD CRI	50.0	0.5	1	2		
52 CLAD ECM	50.0	0.5	1	2		
53 CLAD RAN	50.0	0.5	1	2		
54 PELT APH	50.0	0.5	1	2		
55 PELT MAL	50.0	0.5	1	2		

University of Alberta

ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 32

TITLE : BU 11 POPULUS TREMULOIDES/SHEPHERDIA CANADENSIS/ASTER CONSPICUUS

		20	3G
PLOT NUMBER	MEAN	8544	P151
TOWNSHIP & RANGE		6110	6512
MERIDIAN		W 6	W 6
MAPSHEET		83L 6	83L 12
PHYSIOGRAPHIC SUBREGION			
GEOMORPHIC SYSTEM			
ECOSECTION			
ELEVATION(MASL)	1157.5	1240	1075
SLOPE(%)	29.5	11	48
ASPECT(DEG)		191	175
ENVIRONMENT/SOILS :			
ECOLOGICAL MOISTURE REGIME		SM	SX
NUTRIENT REGIME			M
OVERLYING MATERIAL		L	Cv
UNDERLYING MATERIAL			R1
EROSION/DEPOSITION			F
SOIL SUBGROUP			O
SOIL GREAT GROUP			R
SOIL DRAINAGE		W	W
SOLUM THICKNESS(CM)	20.0		20
TYPE & DEPTH TO RESTRICT(CM)			B 50
THICKNESS LFH(CM)	4.0		4
pH-LFH	0.0		
-A	7.0		7.0
-B	0.0		
-C	7.0		7.0
TEXTURE-A/1			SiL
-B/2			
-C/3			SiL
COARSE FRAGMENTS-B(%)	0.0		
SEEPAGE(*) & MOTTLING(CM)			
ROOTING DEPTH(CM)	0.0		
VEGETATION :			
ASSOCIATION			
STAND AGE(YR)	52.0	52	
CANOPY HEIGHT(M)	16.0	19	13
MEAN ANNUAL INCREMENT	0.0		
STRATA COVERAGE(%)-A	37.5	25	50
-B	20.0	25	15
-C	27.5	25	30
-G	11.5	3	20
-D	1.0	1	1
-L	9.5	19	0
SURFACE SUBST(%)-DEAD WOOD	1.0	2	0
-BEDROCK	0.0	0	0
-STONES	0.0	0	0
-MIN.SOIL	0.0	0	0
-ORGANIC	49.0	98	0
-OPEN WATER	0.0	0	0
BIOMASS(KG/HA)-FORBS	0.0		
-GRAMINOIDS	0.0		
-BROWSE	0.0		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 33 PAGE 1

PLOT NUMBER	AVERAGE VALUE		3G P053		3G P137		3G P209		3G P215		20 8651		20 8650		20 8648		20 8647		20 4579		20 4584		20 7491		GP 4127		GP 3104		GP 3112		GP 3101	
NUMBER OF SPECIES PER PLOT	31.2		22		21		24		21		19		28		28		31		20		19		27		54		46		47		45	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																																
1 PINU CON	100.0	32.8	45	2	30	2	30	2	25	1	52	5	23	2	55	2	37	2	52	2	50	2	42	2	20	3	25	3	40	3	30	3
2 ABIE LAS	44.4	2.4					2	2	2	2	1	2	2	2					1	2											5	2
3 PICE MAR	18.5	0.8	1	2			1	2											2	2												
4 PICE ENE	14.8	1.5											23	2											10	3						
5 PICE GLA	7.4	0.5	5	2																												
6 PICE ENG	3.7	0.2							5	2																						
A2 LAYER																																
PINU CON	88.9	5.0	2	2	5	2	10	2	5	1	1	2	2	2	5	2	3	2	10	2	3	2	3	2	4	3	10	3	.5	3		
ABIE LAS	48.1	2.2									2	2	3	2	1	2			1	2					.5	3					5	2
PICE MAR	22.2	0.7			5	2					3	2							1	2												
PICE ENE	22.2	0.5											2	2											1	3					5	2
PICE GLA	11.1	0.1	1	2																												
PICE ENG	3.7	0.0							1	2																						
E LAYER																																
7 HYPO PHY	48.1	1.4																									.5	3	.5	3	.5	3
8 PARM AMB	48.1	1.4																							.5	3	.5	3	.5	3	.5	3
9 CETR HAL	44.4	1.4																							.5	3	.5	3			.5	3
10 PARM HYP	44.4	1.4																							.5	3	.5	3			.5	3
11 CETR PIN	40.7	0.9																							.5	3	.5	3	.5	3	.5	3
12 BRYO FUS	33.3	0.6																							.5	3	.5	3	.5	3	.5	3
13 USNE SOR	29.6	0.8																							.5	3	.5	3			.5	3
14 BRYO FRE	25.9	1.1																							.5	3			.5	3	.5	3
15 USNE ALP	18.5	0.1																							.5	3			.5	3	.5	3
16 PARM SUL	14.8	0.1																							.5	3					.5	3
17 USNE SCA	11.1	0.8																											.5	3		
18 CETR MER	11.1	0.1																									.5	3				
19 USNE SUB	11.1	0.1																							.5	3	.5	3			.5	3
20 USNE SPP	7.4	0.2																														
21 ALEC SAR	7.4	0.0																											.5	3	.5	3
22 EVER MES	7.4	0.0																											.5	3		
23 BRYO SPP	3.7	0.2																														
24 BRYO CAP	3.7	0.0																									.5	3				
25 CETR ERI	3.7	0.0																											.5	3		
26 HYPO BIT	3.7	0.0																							.5	3						
27 HYPO TUB	3.7	0.0																							.5	3						
28 LETH VUL	3.7	0.0																														
29 PARM ALE	3.7	0.0																													.5	3
B1 LAYER																																
ABIE LAS	33.3	0.6					5	2	1	2			1	2	2	2																
PICE MAR	14.8	0.2			1	2																										
PICE ENE	11.1	0.6											2	2											15	2	.5	3				
PINU CON	11.1	0.1																			1	2	1	2								
30 SALI SCO	3.7	0.1																														
B2 LAYER																																
31 RHOD ALB	88.9	16.9	35	2	10	2	35	2	50	2	20	2	25	2	15	2	4	2	60	2	3	2	13	2	5	3	5	3	10	3	35	3
32 LEDU GRO	81.5	5.9			15	2	20	2	5	2	10	2	2	2	2	2			3	2	10	2	3	2	10	3	.5	3	5	3		
33 VACC MEM	77.8	8.7	5	2	7	2	33	2	20	2	6	2	10	2	11	2	13	2	4	2	9	2	8	2	5	3						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	AVERAGE		3G		3G		3G		3G		20		20		20		20		20		20		20		GP		GP		GP		GP	
PLOT NUMBER	VALUE		P053		P137		P209		P215		8651		8650		8648		8647		4579		4584		7491		4127		3104		3112		3101	
NUMBER OF SPECIES PER PLOT	31.2		22		21		24		21		19		28		28		31		20		19		27		54		46		47		45	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
ABIE LAS	70.4	2.8					13	2			3	2	4	2	2	2			3	2					.5	2			10	3	5	3
34 MENZ FER	48.1	10.3																					3	2	5	3	15	3	15	3		
35 SORB SCO	40.7	0.9	2	2			3	2			2	2							5	2					.5	3	.5	3	.5	3		
36 VACC MYR	22.2	1.9																							10	3	10	3	5	3	5	3
SALI SCO	14.8	0.1																							.5	3	.5	3				
PICE ENE	11.1	0.2											4	2			1	2							.5	3						
37 ALNU CRI	7.4	0.2																									5	0				
38 SALI SPP	7.4	0.2	3	2																			2	2								
39 ROSA ACI	7.4	0.1																														
40 SALI BAR	3.7	0.4															10	2														
41 SPIR BET	3.7	0.4																									10	3				
42 JUNI COM	3.7	0.2																														
43 ALNU TEN	3.7	0.1	3	2																												
PICE MAR	3.7	0.1																														
44 RIBE LAC	3.7	0.1															3	2														
45 SALI PYR	3.7	0.1																			3	2										
46 SHEP CAN	3.7	0.1															3	2														
PINU CON	3.7	0.0																			1	2										
47 SALI GLA	3.7	0.0																														
C LAYER																																
48 CORN CAN	96.3	5.2	9	2	8	2	4	2			5	2	3	2	8	2	5	2	6	2	1	2	1	2	3	3	5	3	15	3	5	3
49 RUBU PED	92.6	10.1	17	2	5	2	15	2	3	2	6	2	7	2	9	2			24	2			1	2	15	3	20	3	20	3	25	3
50 VACC VIT	74.1	3.0			3	2			1	2	1	2	3	2	5	2	1	2	2	2	3	2	1	2	5	3			5	3		
51 LINN BOR	63.0	1.6	1	2	2	2	1	2			4	2			6	2	8	2	1	2					3	3	.5	3	3	3	2	3
52 LYCO ANN	55.6	1.9			1	2	2	2			8	2	1	2			1	2			2	2					12	3	2	3	2	3
53 ORTH SEC	55.6	0.8	1	2	1	2	2	2					1	2	1	2	1	2	1	2							.5	3			.5	3
54 ARNI LAT	48.1	1.3	3	2									2	2	6	2	5	2					1	2			.5	3			2	3
55 STRE AMP	44.4	1.6					2	2											1	2					5	3	15	3	.5	3	5	3
56 VERA ESC	40.7	0.9							3	2															.5	3	5	3	.5	3	.5	3
57 EMPE NIG	37.0	2.5							6	2			1	2	4	2					4	2	4	2								
58 EPIL ANG	29.6	0.6											1	2	1	2	3	2							.5	3	10	3				
59 EQUI SYL	22.2	0.5									1	2			1	2													5	3		
60 PETA PAL	22.2	0.4							1	2															5	3	.5	3				
61 ARNI COR	18.5	0.6					8	2									6	2							.5	3						
62 GYMN DRY	14.8	0.6																							5	3	5	3	.5	3		
63 MAIA CAN	14.8	0.3																							2	3	3	3				
64 VACC CAE	11.1	1.1																											5	3	5	3
65 LYCO CLA	11.1	0.1																					1	2								
66 PHYL EMP	7.4	0.4																														
67 MITE NUD	7.4	0.1															1	2							.5	3						
68 PYRO ASA	7.4	0.1																							.5	3					2	3
69 STRE ROS	7.4	0.1																							2	3						
70 RUBU PUB	7.4	0.0																														
71 EQUI ARV	3.7	0.1															2	2														
72 CORA TRI	3.7	0.0																														
73 DISP TRA	3.7	0.0							1	2																						
74 EQUI PRA	3.7	0.0																							.5	3						
75 EQUI SCI	3.7	0.0															1	2														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		3G P053		3G P137		3G P209		3G P215		20 8651		20 8650		20 8648		20 8647		20 4579		20 4584		20 7491		GP 4127		GP 3104		GP 3112		GP 3101	
NUMBER OF SPECIES PER PLOT	31.2		22		21		24		21		19		28		28		31		20		19		27		54		46		47		45	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
76 LIST COR	3.7	0.0																														
77 PYRO CHL	3.7	0.0															1	2														
78 TIAR UNI	3.7	0.0																							.5	3						
G LAYER																																
79 CALA STR	11.1	0.1											1	2	1	2	1	2														
80 CALA CAN	7.4	0.4																							10	3	.5	3				
81 ELYM INN	3.7	0.1															3	2														
D LAYER																																
82 PLEU SCH	100.0	40.9	85	2	55	2	55	2	91	2	26	2	70	2	34	2	18	2	3	2	80	2	30	2	20	3	25	3	25	3	20	3
83 PTIL CRI	92.6	17.9	11	2	5	2	10	2	6	2	27	2	7	2	3	2	1	2	40	2	1	2	1	2	50	3	10	3	15	3	50	3
84 HYLO SPL	92.6	11.9	2	2	6	2	2	2	1	2	36	2	10	2	4	2	9	2	51	2	6	2			10	3	20	3	25	3	10	3
85 DICR FUS	44.4	0.8			1	2			1	2					1	2	1	2			2	2			.5	2			.5	3	.5	3
86 POHL NUT	40.7	0.8													1	2	1	2					1	2			.5	3	.5	3	.5	3
87 POLY JUN	33.3	0.3	1	2			1	2							1	2	1	2					1	2								
88 DICR SCO	22.2	0.4					2	2					4	2																	.5	3
89 BARB LYC	18.5	0.6	1	2	1	2	1	2															1	2								
90 DICR POL	14.8	0.3	2	2											1	2							4	2								
91 PTIL PUL	14.8	0.1																									.5	3	.5	3	.5	3
92 AULA PAL	7.4	0.1			2	2																										
93 BRAC STA	7.4	0.1					1	2															1	2								
94 POLY COM	7.4	0.1			1	2			1	2																						
95 DICR FLA	7.4	0.0																									.5	3	.5	3		
96 TETR PEL	7.4	0.0																									.5	3	.5	3		
97 DICR ACU	3.7	2.0																														
98 BRAC SAL	3.7	0.1															2	2														
99 BARB HAT	3.7	0.0																											.5	3		
100 DICR BRE	3.7	0.0																														
101 JAME AUT	3.7	0.0																											.5	3		
102 LEPI REP	3.7	0.0																											.5	3		
103 TRIT EXS	3.7	0.0																														
L LAYER																																
104 PELT APH	63.0	2.5	1	2					1	2			4	2	1	2	2	2			1	2	2	2					5	3		
105 CLAD MIT	40.7	0.7			1	2									1	2					1	2	1	2	.5	3						
106 CLAD GRA	29.6	0.8																					1	2					.5	3	.5	3
107 CLAD ECM	25.9	0.5													1	2	1	2					2	2							.5	3
108 CLAD GON	25.9	0.3																							.5	3	.5	3	.5	3	.5	3
109 PELT MAL	25.9	0.3											1	2									1	2								
110 CLAD COR	18.5	0.1																							.5	3	.5	3			.5	3
111 CLAD CEN	14.8	0.1																							.5	3	.5	3			.5	3
112 CLAD CON	11.1	0.2																							.5	3			.5	3		
113 CLAD CHL	11.1	0.1																							.5	3			.5	3	.5	3
114 CLAD COI	11.1	0.1																									.5	3	.5	3		
115 CLAD CRI	7.4	0.1																					1	2					.5	3		
116 CLAD DEF	7.4	0.1																														
117 CLAD SQU	7.4	0.1																									.5	3				
118 STER TOM	7.4	0.1																														
119 CLAD PHY	7.4	0.0																											.5	3		
120 CETR ISL	3.7	0.1																														

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ECOSYM UNIT	SA	1	

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PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 33 PAGE 4

PLOT NUMBER	AVERAGE VALUE		3G P053		3G P137		3G P209		3G P215		20 8651		20 8650		20 8648		20 8647		20 4579		20 4584		20 7491		GP 4127		GP 3104		GP 3112		GP 3101	
NUMBER OF SPECIES PER PLOT	31.2		22		21		24		21		19		28		28		31		20		19		27		54		46		47		45	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
121 CLAD UNC	3.7	0.1																														
122 CLAD CAR	3.7	0.0																													.5	3
123 CLAD FIM	3.7	0.0																													.5	3
124 CLAD SPP	3.7	0.0																			1	2										
125 PELT CAN	3.7	0.0																														

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	GP		GP		GP		3B		3B		3B		3B		3B		3B		3B		20		20	
PLOT NUMBER	3102		3103		3111		F087		F008		F007		F146		F005		F067		F068		7490		8532	
NUMBER OF SPECIES PER PLOT	37		39		33		33		38		28		28		28		33		34		24		35	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																								
1 PINU CON	35	3	20	3	40	3	45	2	8	1	25	2	25	2	65	2	15	2	25	1	15	2	11	2
2 ABIE LAS									7	1	20	2	2	1			10	2	10	2			2	2
3 PICE MAR											5	2									12	2		
4 PICE ENE													2	2									5	2
5 PICE GLA											8	2												
6 PICE ENG																								
A2 LAYER																								
PINU CON	10	3	15	3	.5	3	5	2	1	1			5	2	5	1	5	2	20	1	5	2		
ABIE LAS							1	2	1	1	5	2	5	1			30	2	5	2			1	2
PICE MAR							3	2													3	2	5	2
PICE ENE													1	2			1	2					3	2
PICE GLA											2	2							1	2				
PICE ENG																								
E LAYER																								
7 HYPO PHY	.5	3	.5	3	.5	3	5	2	5	2	5	2	5	2	5	2	5	2	5	2				
8 PARM AMB			.5	3	.5	3	5	2	5	2	5	2	5	2	5	2	5	2	5	2				
9 CETR HAL	.5	3			.5	3	5	2	5	2	5	2	5	2	5	2	5	2	5	2				
10 PARM HYP			.5	3	.5	3	5	2	5	2	5	2	5	2	5	2	5	2	5	2				
11 CETR PIN	.5	3	.5	3	.5	3	5	2					5	2			5	2	5	2				
12 BRYO FUS	.5	3			.5	3	3	2	5	2	5	2												
13 USNE SOR					.5	3			5	2	5	2	5	2			5	2						
14 BRYO FRE							2	2					15	2			5	2	5	2				
15 USNE ALP			.5	3	.5	3																		
16 PARM SUL			.5	3	.5	3																		
17 USNE SCA							5	2											15	2				
18 CETR MER	.5	3			.5	3																		
19 USNE SUB																								
20 USNE SPP	.5	3													5	2								
21 ALEC SAR																								
22 EVER MES	.5	3																						
23 BRYO SPP															5	2								
24 BRYO CAP																								
25 CETR ERI																								
26 HYPO BIT																								
27 HYPO TUB																								
28 LETH VUL					.5	3																		
29 PARM ALE																								
B1 LAYER																								
ABIE LAS			.5	3	.5	3											1	2			3	2	1	2
PICE MAR							2	2	1	2													1	2
PICE ENE																								
PINU CON	1	3																						
30 SALI SCO	4	3																						
B2 LAYER																								
31 RHOD ALB	15	3	10	2					25	2			5	2	20	2	10	2	10	2	20	2	15	2
32 LEDU GRO	15	3	.5	3	20	3	5	2	15	2	1	2	3	2	6	2	1	2	8	2				
33 VACC MEM							10	2	15	2	15	2	10	2	20	2	10	2	15	2	7	2	3	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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	GP		GP		GP		3B		3B		3B		3B		3B		3B		3B		20		20	
PLOT NUMBER	3102		3103		3111		F087		F008		F007		F146		F005		F067		F068		7490		8532	
NUMBER OF SPECIES PER PLOT	37		39		33		33		38		28		28		28		33		34		24		35	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
ABIE LAS			5	3	.5	3	1	2	10	2	5	2	2	2	2	2	1	2	3	2	3	2	3	2
34 MENZ FER			20	2	10	3	15	2	20	2	5	2	50	2	40	2	50	2	30	2				
35 SORB SCO	1	3	5	3	5	3									1	2								
36 VACC MYR	10	3	10	3																				
SALI SCO	1	3							1	2														
PICE ENE																								
37 ALNU CRI							1	2																
38 SALI SPP																								
39 ROSA ACI							1	2											1	2				
40 SALI BAR																								
41 SPIR BET																								
42 JUNI COM																							5	2
43 ALNU TEN																								
PICE MAR							2	2																
44 RIBE LAC																								
45 SALI PYR																								
46 SHEP CAN																								
PINU CON																								
47 SALI GLA			.5	3																				
C LAYER	-----		-----		-----		-----		-----		-----		-----		-----		-----		-----		-----		-----	
48 CORN CAN	10	3	5	3	5	3	5	2	2	2	5	2	4	2	3	2	12	2	7	2	2	2	3	2
49 RUBU PED	15	3	25	3	20	3	5	2	1	2	10	2	7	2	5	2	7	2	7	2	2	2	1	2
50 VACC VIT	10	3			20	3	5	2	5	2			2	2	2	2			5	2	2	2	1	2
51 LINN BOR					.5	3	3	2			2	2			2	2	2	2	2	2				
52 LYCO ANN	5	3	10	3			1	2					1	2	2	2							1	2
53 ORTH SEC			5	3			1	2	1	2	3	2					2	2	1	2				
54 ARNI LAT	10	2	.5	3			1	2							1	2					1	2	1	2
55 STRE AMP			10	3	.5	3	1	2			1	2					1	2	1	2				
56 VERA ESC	5	3	5	3	.5	3	1	2							1	2	1	2						
57 EMPE NIG									7	2			1	2					4	2	7	2	30	2
58 EPIL ANG	.5	3	.5	3											1	2								
59 EQUI SYL	.5	3	5	3									1	2										
60 PETA PAL			2	3	.5	3											2	2						
61 ARNI COR																	1	2	2	2				
62 GYMN DRY			5	3																				
63 MAIA CAN					.5	3									2	2								
64 VACC CAE					20	3																		
65 LYCO CLA									2	2									1	2				
66 PHYL EMP																					3	2	7	2
67 MITE NUD																								
68 PYRO ASA																								
69 STRE ROS															1	2								
70 RUBU PUB	.5	3	.5	3																				
71 EQUI ARV																								
72 CORA TRI											1	2												
73 DISP TRA																								
74 EQUI PRA																								
75 EQUI SCI																								

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	GP 3102		GP 3103		GP 3111		3B F087		3B F008		3B F007		3B F146		3B F005		3B F067		3B F068		20 7490		20 8532	
NUMBER OF SPECIES PER PLOT	37		39		33		33		38		28		28		28		33		34		24		35	
SPECIES	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
76 LIST COR											1	2												
77 PYRO CHL																								
78 TIAR UNI																								
G LAYER																								
79 CALA STR																								
80 CALA CAN																								
81 ELYM INN																								
D LAYER																								
82 PLEU SCH	20	3	50	3	20	3	20	2	50	2	30	2	80	2	75	2	40	2	55	2	26	3	1	2
83 PTIL CRI	10	3	10	3	10	3	60	2	5	2	50	2	10	2	10	2	45	2	35	2				
84 HYLO SPL	20	3	20	3	20	3	15	2	15	2	15	2	3	2	5	2	10	2	5	2			1	2
85 DICR FUS	.5	3	.5	3					7	2													5	2
86 POHL NUT	.5	3	10	3					5	2									1	2			1	2
87 POLY JUN	.5	3							1	2	1	2											1	2
88 DICR SCO																	1	2	2	2	2	2		
89 BARB LYC																							12	2
90 DICR POL																							1	2
91 PTIL PUL			.5	3																				
92 AULA PAL																							1	2
93 BRAC STA																								
94 POLY COM																								
95 DICR FLA																								
96 TETR PEL																								
97 DICR ACU																					53	2		
98 BRAC SAL																								
99 BARB HAT																								
100 DICR BRE													1	2										
101 JAME AUT																								
102 LEPI REP																								
103 TRIT EXS	.5	3																						
L LAYER																								
104 PELT APH					30	3	2	2	3	2	2	2			3	2	5	2	3	2	2	2	1	2
105 CLAD MIT	.5	3	.5	3					5	2							1	2			1	2	7	2
106 CLAD GPA	.5	3	.5	3	.5	3			15	2													3	2
107 CLAD ECM									1	2											2	2	6	2
108 CLAD GON	.5	3	.5	3					4	2														
109 PELT MAL									1	2							1	2	1	2	1	2	1	2
110 CLAD COR	.5	3																			1	2		
111 CLAD CEN	.5	3																						
112 CLAD CON					5	3																		
113 CLAD CHL																								
114 CLAD COI			.5	3																				
115 CLAD CRI																								
116 CLAD DEF																					1	2	1	2
117 CLAD SQU																					1	2		
118 STER TOM									[illegible]	2													1	2
119 CLAD PHY			.5	3																				
120 CETR ISL																							2	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	1	

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 33 PAGE 8

PLOT NUMBER	GP 3102	GP 3103	GP 3111	3B F087	3B F008	3B F007	3B F146	3B F005	3B F067	3B F068	20 7490	20 8532
NUMBER OF SPECIES PER PLOT	37	39	33	33	38	28	28	28	33	34	24	35
SPECIES	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV	%C SV
121 CLAD UNC					2 2							
122 CLAD CAR												
123 CLAD FIM												
124 CLAD SPP												
125 PELT CAN					1 2							

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 33

TITLE : SA 1 PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

		3G	3G	3G	3G	20	20	20	20	20	20	20	GP	GP	GP	GP	GP	GP	GP	3B
PLOT NUMBER	MEAN	P053	P137	P209	P215	8651	8650	8648	8647	4579	4584	7491	4127	3104	3112	3101	3102	3103	3111	F087
TOWNSHIP & RANGE		6410	6412	6411	6411	62 8	61 9	6110	6110	62 8	63 9	60 8	62 3	62 3	61 3	61 3	61 3	61 3	62 2	58 5
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 11	83L 12	83L 12	83L 12	83L 6	83L 6	83L 6	83L 6	83L 6	83L 6	83L 3	83L 8	83L 8	83L 8	83L 8	83L 8	83L 8	83L 8	83L 2
PHYSIOGRAPHIC SUBREGION																				
GEOMORPHIC SYSTEM																				
ECOSECTION																				
ELEVATION(MASL)	1451.1	1420	1230	1430	1500	1380	1480	1580	1570	1480	1500	1820	1100	1285	1295	1280	1320	1300	1300	1440
SLOPE(%)	7.5	6	15	17	3	20	4	5	12	8	7	12	10	5	4	0	0	0	2	2
ASPECT(DEG)		132	9	32	140	326	285	66	279	334	16	6	350	350	350				60	135
ENVIRONMENT/SOILS :																				
ECOLOGICAL MOISTURE REGIME		M	M	M	M	SHG	M	M	SM	SHG	M	M	M	M	SM	SM	SM	SM	SM	SHG
NUTRIENT REGIME		SM	M	SM	M								M	M	M	M	SM	M	M	M
OVERLYING MATERIAL		Mb	Mbv	Mb	Mb	M		M	C	M	M	M	M	M	M	M	M	M	M	MG
UNDERLYING MATERIAL		R	Rm	R1	Ru															S
EROSION/DEPOSITION																				
SOIL SUBGROUP		BR	E	BR	BR								BR	E	BR	BR	O	BR	BR	O
SOIL GREAT GROUP		GL	EB	GL	GL								GL	DYB	GL	GL	GL	GL	GL	LG
SOIL DRAINAGE		W	W	MW	W	MW	W	W	W	I	MW	MW	MW	W	W	W	W	W	MW	P
SOLUM THICKNESS(CM)	47.8	40	36	53	42								57	30	60	63	30	35	50	44
TYPE & DEPTH TO RESTRICT(CM)			B120		B100															
THICKNESS LFH(CM)	7.8	8	11	6	5								7	12	9	7	11	8	15	6
pH-LFH	3.5												4.0	3.4	3.3	3.4	3.6	3.4	3.1	
-A	4.0	4.0	5.0	4.0	5.0								3.6	3.6	3.7	3.3	3.7	3.6	3.5	4.3
-B	4.5	4.0	6.0	5.0	6.0								4.4	4.4	4.2	3.3	4.2	4.2	4.0	5.5
-C	5.4	5.0	6.0	7.0	6.0									4.3	4.4	4.1		4.3	4.3	8.0
TEXTURE-A/1		SI	S	SIL	SIL								SIL	L	SIL	SIL	SIL	SIL	SIL	SIL
-B/2		SICL	LS	SICL	SICL								SIL	L	L	SIL	CL	CL	SIL	CL
-C/3		SICL	LS	SICL	SICL									CL	CL	CL		CL	CL	SCL
COARSE FRAGMENTS-B(%)	18.4	35	30	35	10															5
SEEPAGE(*) & MOTTLING(CM)																				7
ROOTING DEPTH(CM)	36.2												48		45	45			18	35
VEGETATION :																				
ASSOCIATION																				
STAND AGE(YR)	118.5	88	88			180				159		83	160	59	172	151	41	169	75	
CANOPY HEIGHT(M)	16.4	16	17	15	16	25	21		21	20		14	15	15	15	19	10	20	13	13
MEAN ANNUAL INCREMENT	0.0																			
STRATA COVERAGE(%)-A	44.7	50	40	45	40	60	55	6	40	65	55	45	35	35	40	45	45	35	40	55
-B	41.1	35	30	95	70	40	35	20	20	0	15	20	50	45	45	45	45	50	35	35
-C	35.9	30	20	33	15	35	25	60	40	30	20	25	65	79	60	50	70	40	70	
-G	0.7	0	0	0	0	0	1	1	4	0	0	0	10	1	0	0	0	0	0	
-D	75.8	99	90	70	99	95	90	47	27	95	77	82	70	60	75	80	50	90	70	
-L	7.3	1	1	0	1	0	5	3	3	0	8	8	10	10	10	10	10	10	10	
SURFACE SUBST(%)-DEAD WOOD	5.4	3	5	2	2	5	5	7	7	3	5	3	5	1	10	10	5	15	1	3
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	94.6	97	95	98	98	95	95	93	93	97	95	97	95	99	90	90	95	85	99	97
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0																			
-GRAMINOIDS	0.0																			
-BROWSE	0.0																			

ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : SA 1 PINUS CONTORTA/RHODODENDRON ALBIFLORUM/PLEUROZIUM SCHREBERI

	38	38	38	38	38	38	20	20
PLOT NUMBER	F008	F007	F146	F005	F067	F068	7490	8532
TOWNSHIP & RANGE	58 5	59 4	5[illegible] 5	59 4	58 6	58 6	60 8	6212
MERIDIAN	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET	83L 2	83L 2	83L 2	83L 2	83L 2	83L 2	83L 3	83L 5
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	1590	1400	1520	1400	1500	1480	1840	1740
SLOPE(%)	2	18	0	6	6	7	8	24
ASPECT(DEG)	258	275		360	8	160	20	60
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME	SM	HG	M	SHG	SHG	SHG	M	SM
NUTRIENT REGIME	O	SM	O	O	SM	SM		
OVERLYING MATERIAL	MGb	MGb	MGv	MGb	MGuv	MGv	C	X
UNDERLYING MATERIAL	MGb		R		S	S		
EROSION/DEPOSITION								
SOIL SUBGROUP	BR	GLBR	BR	O	BR	O		
SOIL GREAT GROUP	GL	GL	GL	LG	GL	LG		
SOIL DRAINAGE	W	I	W	I	MW	P	MW	W
SOLUM THICKNESS(CM)	43	60	56	51	63	48		
TYPE & DEPTH TO RESTRICT(CM)		F 21	B 56		W 42	W 24		
THICKNESS LFH(CM)	4	4	6	3	8	10		
pH-LFH								
-A	4.5	4.5	4.0	4.0	4.0	4.0		
-B	4.5	4.5	4.0	4.0	4.5	5.0		
-C		5.5			6.0			
TEXTURE-A/1	LS	SIL	SIL	SIL	SIL	SIL		
-B/2	LS	L	SL	SIL	SL	SL		
-C/3		CL			S			
COARSE FRAGMENTS-B(%)	10		5	1		35		
SEEPAGE(*) & MOTTLING(CM)		* 38		8		* 13		
ROOTING DEPTH(CM)	25	47	33	27	42	33		
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)							112	122
CANOPY HEIGHT(M)	13	20	12	20	13	16	17	15
MEAN ANNUAL INCREMENT								
STRATA COVERAGE(%)-A	15	65	40	70	60	60	35	30
-B	55	20	65	75	65	55	25	20
-C	15	20	12	15	20	20	25	40
-G	0	0	0	0	0	0	0	0
-D	50	85	94	87	90	90	82	28
-L	40	2	3	3	7	5	8	22
SURFACE SUBST(%)-DEAD WOOD	7	15	5	10	3	5	2	2
-BEDROCK	0	0	0	0	0	0	0	0
-STONES	0	0	0	0	0	0	0	0
-MIN SOIL	0	0	0	0	0	0	0	0
-ORGANIC	93	85	94	90	97	95	98	98
-OPEN WATER	0	0	1	0	0	0	0	0
BIOMASS(KG/HA)-FORBS								
-GRAMINOIDS								
-BROWSE								

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	2	

PICEA ENGELMANNII-ABIES LASIOCARPA/RHODODENDRON ALBIFLORUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 34 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 7488		3G 220A		3B F114		3B F006		GP 3113		20 8649		20 7471		20 8503		20 8526	
NUMBER OF SPECIES PER PLOT	34.7		27		34		52		30		65		28		25		27		24	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																				
1 ABIE LAS	66.7	13.8	41	2			1	2	35	2			15	2	30	2	2	2		
2 PINU CON	66.7	5.0			10	2	2	2	13	2			3	2						
3 PICE ENG	44.4	6.1	7	2													5	2	12	2
4 PICE ENE	33.3	8.8					30	2			45	3	4	2	5	2	26	2	17	2
5 PICE GLA	22.2	4.7			40	2			2	2										
A2 LAYER																				
ABIE LAS	77.8	6.2	10	2			2	2	4	2			20	2	5	2	10	2	5	2
PINU CON	44.4	2.1			5	2	10	2	1	2							3	2		
PICE ENG	33.3	1.9	3	2													4	2	10	2
PICE ENE	33.3	1.8					5	2			10	3	1	2						
PICE GLA	11.1	0.6			5	2														
E LAYER																				
6 PARM HYP	33.3	2.3					15	2	5	2	.5	3								
7 PARM AMB	33.3	1.2					5	2	5	2	.5	3								
8 HYPO PHY	22.2	1.1					5	2	5	2										
9 CETR HAL	22.2	0.6					5	2			.5	3								
10 CETR PIN	22.2	0.6					5	2			.5	3								
11 USNE SOR	22.2	0.6							5	2	.5	3								
12 USNE SCA	11.1	1.7					15	2												
13 BRYO FRE	11.1	0.6					5	2												
14 BRYO FUS	11.1	0.6							5	2										
15 BRYO CAP	11.1	0.1									.5	3								
16 PARM SUL	11.1	0.1									.5	3								
17 RAMA FAS	11.1	0.1									.5	3								
18 RAMA THR	11.1	0.1									.5	3								
19 USNE ALP	11.1	0.1									.5	3								
20 USNE SUB	11.1	0.1									.5	3								
B1 LAYER																				
ABIE LAS	77.8	3.6	5	2	1	2	1	2					5	2	15	2	3	2	2	2
PICE ENE	22.2	0.2									.5	3	1	2						
PICE ENG	11.1	0.2																	2	2
21 ALNU CRI	11.1	0.1					1	2												
B2 LAYER																				
22 RHOD ALB	100.0	11.7	20	2	10	2	3	2	25	2	5	3	10	2	10	2	2	2	20	2
ABIE LAS	100.0	8.9	10	2	10	2	9	2	7	2	10	3	2	2	20	2	10	2	2	2
23 VACC MEM	88.9	10.7	23	2	20	2	3	2	15	2			6	2	11	2	14	2	4	2
24 MENZ FER	33.3	3.0					2	2	5	2	20	3								
25 LEDU GRO	33.3	1.9					2	2			.5	3	15	2						
26 LONI INV	33.3	0.8			1	2	1	2			5	3								
ALNU CRI	22.2	1.9					7	2			10	3								
27 RIBE LAC	22.2	0.8					7	2			.5	3								
28 ROSA ACI	22.2	0.4					2	2			2	3								
PICE GLA	22.2	0.3			2	2			1	2										
29 RIBE OXY	22.2	0.2			1	2					.5	3								
30 SORB SCO	22.2	0.2			1	2			1	2										
31 SALI MYR	11.1	0.8					7	2												
32 VIBU EDU	11.1	0.6									5	3								

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	2	

PICEA ENGELMANNII-ABIES LASIOCARPA/RHODODENDRON ALBIFLORUM

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 34 PAGE 2

	AVERAGE		20		3G		3B		3B		GP		20		20		20		20	
PLOT NUMBER	VALUE		7488		220A		F114		F006		3113		8649		7471		8503		8526	
NUMBER OF SPECIES PER PLOT	34.7		27		34		52		30		65		28		25		27		24	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
PICE ENE	11.1	0.2					2	2												
33 SALI SPP	11.1	0.2			2	2														
34 BETU PUM	11.1	0.1			1	2														
35 SALI SCO	11.1	0.1									.5	3								
C LAYER																				
36 ORTH SEC	100.0	1.1	1	2	1	2	2	2	1	2	.5	3	1	2	1	2	1	2	1	2
37 RUBU PED	88.9	4.4	1	2	4	2	4	2	10	2	10	3	7	2			3	2	1	2
38 CORN CAN	88.9	2.9	3	2	2	2	8	2	5	2	2	3	1	2			4	2	1	2
39 LINN BOR	66.7	3.3	1	2	3	2	10	2	5	2	8	3	3	2						
40 VACC VIT	66.7	0.7	1	2	2	2	1	2			.5	3	1	2	1	2				
41 EMPE NIG	55.6	1.3	1	2									1	2	1	2	7	2	2	2
42 LYCO ANN	55.6	0.5	1	2			1	2			.5	3			1	2			1	2
43 STRE AMP	44.4	0.7			2	2	1	2	1	2	2	3								
44 PHYL EMP	33.3	2.4													10	2	4	2	8	2
45 ARNI LAT	33.3	1.2	1	2													5	2	5	2
46 PETA PAL	33.3	1.0			1	2	3	2			5	3								
47 ARNI COR	33.3	0.8			5	2	2	2			.5	3								
48 EPIL ANG	33.3	0.8			2	2	3	2			2	3								
49 PYRO ASA	33.3	0.3					1	2	1	2	.5	3								
50 EQUI PRA	22.2	3.1					3	2			25	3								
51 MITE NUD	22.2	1.6					6	2			8	3								
52 VERA ESC	22.2	0.8									4	3					3	2		
53 FRAG VIR	22.2	0.7			1	2	5	2												
54 ARTE NOR	22.2	0.3													2	2	1	2		
55 MAIA CAN	22.2	0.3			1	2					2	3								
56 HERA LAN	22.2	0.2					1	2			.5	3								
57 MERT PAN	22.2	0.2					1	2			.5	3								
58 LUPI SER	11.1	2.1															19	2		
59 VALE SIT	11.1	1.1			10	2														
60 ERIG SPP	11.1	0.6									5	3								
61 RUBU PUB	11.1	0.6									5	3								
62 OSMO CHI	11.1	0.2					2	2												
63 TIAR UNI	11.1	0.2									2	3								
64 ACHI MIL	11.1	0.1					1	2												
65 ACTA RUB	11.1	0.1									.5	3								
66 ARNI RYD	11.1	0.1							1	2										
67 ASTE LAE	11.1	0.1									.5	3								
68 CORA TRI	11.1	0.1							1	2										
69 DELP GLA	11.1	0.1									.5	3								
70 EQUI ARV	11.1	0.1			1	2														
71 GALI BOR	11.1	0.1									.5	3								
72 GALI TRI	11.1	0.1									.5	3								
73 GEUM ALE	11.1	0.1									.5	3								
74 LIST COR	11.1	0.1							1	2										
75 MONE UNI	11.1	0.1			1	2														
76 PEDI SPP	11.1	0.1													1	2				
77 POLY VIV	11.1	0.1													1	2				
78 PYRO CHL	11.1	0.1					1	2												

University of Alberta

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	2	

PICEA ENGELMANNII-ABIES LASIOCARPA/RHODODENDRON ALBIFLORUM

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 34 PAGE 3

PLOT NUMBER	AVERAGE VALUE		20 7488		3G 220A		3B F114		3B F006		GP 3113		20 8649		20 7471		20 8503		20 8526	
NUMBER OF SPECIES PER PLOT	34.7		27		34		52		30		65		28		25		27		24	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
79 SMIL RAC	11.1	0.1									.5	3								
80 VIOL ORB	11.1	0.1															1	2		
G LAYER																				
81 ELYM INN	33.3	0.8			5	2	1	2							1	2				
82 CALA CAN	22.2	0.7					1	2			5	3								
83 CALA STR	11.1	0.1															1	2		
D LAYER																				
84 PLEU SCH	88.9	22.4	39	2	20	2	2	2	2	2	20	3	43	2			16	2	60	2
85 HYLO SPL	77.8	22.6	12	2	75	2	15	2	45	2	20	3	23	2					13	2
86 PTIL CRI	77.8	15.0	1	2	5	2	75	2	20	2	20	3	13	2					1	2
87 DICR POL	44.4	2.7	7	2											12	2	4	2	1	2
88 POLY JUN	44.4	0.6	1	2									1	2			2	2	1	2
89 DICR SCO	33.3	7.7							30	2					9	2	30	2		
90 BAZZ TRI	33.3	1.6											5	2	4	2	5	2		
91 DICR FUS	33.3	0.7					1	2			.5	3	5	2						
92 POHL NUT	11.1	0.3	3	2																
93 DREP UNC	11.1	0.2															2	2		
94 ANAS HEL	11.1	0.1									.5	3								
95 AULA PAL	11.1	0.1	1	2																
96 DICR FLA	11.1	0.1									.5	3								
97 PTIL PUL	11.1	0.1									.5	3								
L LAYER																				
98 PELT APH	77.8	3.2			1	2	1	2	7	2	10	3	4	2	2	2			4	2
99 CLAD MIT	44.4	0.4	1	2	1	2									1	2			1	2
100 CLAD ECM	33.3	2.0	1	2											15	2			2	2
101 PELT MAL	22.2	0.4											2	2	2	2				
102 CLAD GRA	22.2	0.2	1	2									1	2						
103 STER TOM	11.1	0.2													2	2				
104 CETR ISL	11.1	0.1													1	2				
105 CLAD CAP	11.1	0.1									.5	3								
106 CLAD CEN	11.1	0.1									.5	3								
107 CLAD CON	11.1	0.1									.5	3								
108 CLAD COR	11.1	0.1											1	2						
109 CLAD CRI	11.1	0.1									.5	3								
110 CLAD DEF	11.1	0.1											1	2						
111 CLAD PHY	11.1	0.1	1	2																

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY

TABLE 34

TITLE : SA 2 PICEA ENGELMANNII-ABIES LASIOCARPA/RHODODENDRON ALBIFLORUM

PLOT NUMBER	MEAN	20 7488	3G 220A	3B F114	3B F006	GP 3113	20 8649	20 7471	20 8503	20 8526
TOWNSHIP & RANGE		60 8	6411	58 5	59 4	61 3	61 9	6010	6010	6212
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 3	83L 12	83L 2	83L 2	83L 8	83L 6	83L 3	83L 3	83L 5
PHYSIOGRAPHIC SUBREGION										
GEOMORPHIC SYSTEM										
ECOSECTION										
ELEVATION(MASL)	1517.8	1820	1450	1430	1380	1325	1465	1680	1600	1510
SLOPE(%)	10.6	38		7	3	9	4	12	2	10
ASPECT(DEG)		174		320	2	70	142	4	164	46
ENVIRONMENT/SOILS :										
ECOLOGICAL MOISTURE REGIME		M		HG	HG	SHG	SM	SM	M	SHG
NUTRIENT REGIME				E	SM	PM				
OVERLYING MATERIAL		M		MGv	MGb	Mh			X	X
UNDERLYING MATERIAL				S						
EROSION/DEPOSITION										
SOIL SUBGROUP				O	O	O				
SOIL GREAT GROUP				G	LG	G				
SOIL DRAINAGE		MW		P	P	I	W	W	W	MW
SOLUM THICKNESS(CM)	39.3			50	64	4				
TYPE & DEPTH TO RESTRICT(CM)				W 22	W 50	W 25				
THICKNESS LFH(CM)	10.0			8	5	17				
pH-LFH	5.9					5.9				
-A	5.8			7.0	4.5					
-B	6.3			8.0	4.5					
-C	7.2			8.0	7.0	6.7				
TEXTURE-A/1					SIL	SIL				
-B/2				SL	L					
-C/3				L	CL	CL				
COARSE FRAGMENTS-B(%)	10.0			10						
SEEPAGE(*) & MOTTLING(CM)				* 12	* 35	* 4				
ROOTING DEPTH(CM)	16.3			15	22	12				
VEGETATION :										
ASSOCIATION										
STAND AGE(YR)	161.7	255				112				118
CANOPY HEIGHT(M)	21.1	20		25	20	27	20		18	18
MEAN ANNUAL INCREMENT	4.4					4.41				
STRATA COVERAGE(%)-A	51.1	60	60	50	55	55	40	45	50	45
-B	36.7	35	50	30	40	55	35	45	15	25
-C	34.4	40	35	30	20	80	20	20	45	20
-G	1.4	0	5	2	0	5	0	0	1	0
-D	75.8	91	99	98	88	70	86	17	60	73
-L	6.9	4	2	0	7	10	9	23	0	7
SURFACE SUBST(%)-DEAD WOOD	6.1	5	0	8	15	5	15	2	3	2
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0
-ORGANIC	83.9	95	0	92	85	95	95	98	97	98
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0									
-GRAMINOIDS	0.0									
-BROWSE	0.0									

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	3	

PICEA ENGELMANNII-ABIES LASIOCARPA/PHYLLODOCE EMPETRIFORMIS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

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TABLE 35 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 8637		20 4583		20 7479	
NUMBER OF SPECIES PER PLOT	19.3		26		10		22	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
A1 LAYER								
1 PICE ENG	33.3	3.3	10	2				
2 ABIE LAS	33.3	0.7	2	2				
B1 LAYER								
ABIE LAS	66.7	16.7	10	2	40	2		
PICE ENG	66.7	5.3	15	2	1	2		
B2 LAYER								
ABIE LAS	100.0	15.7	12	2	30	2	5	2
PICE ENG	66.7	10.3	13	2			18	2
3 SALI ARC	33.3	3.3	10	2				
4 VACC MEM	33.3	3.0			9	2		
C LAYER								
5 CASS TET	100.0	19.7	12	2	2	2	45	2
6 PHYL EMP	100.0	8.0	10	2	7	2	7	2
7 GENT GLA	66.7	0.7	1	2			1	2
8 LUPI SER	33.3	3.0	9	2				
9 ARNI LAT	33.3	1.0	3	2				
10 HIER TRI	33.3	1.0					3	2
11 OXYR DIG	33.3	0.7					2	2
12 ARTE NOR	33.3	0.3					1	2
13 PEDI BRA	33.3	0.3	1	2				
14 PETA SAG	33.3	0.3					1	2
15 POLE SPP	33.3	0.3					1	2
16 POLY VIV	33.3	0.3	1	2				
17 POTE DIV	33.3	0.3					1	2
18 SIBB PRO	33.3	0.3					1	2
19 VACC CAE	33.3	0.3					1	2
G LAYER								
20 LUZU PAR	66.7	0.7	1	2			1	2
21 CARE NIG	33.3	2.0					6	2
22 JUNC DRU	33.3	0.7					2	2
23 CARE CON	33.3	0.3			1	2		
24 CARE VAG	33.3	0.3	1	2				
D LAYER								
25 DICR SCO	100.0	14.3	20	2	12	2	11	2
26 BAZZ TRI	66.7	25.0			70	2	5	2
27 DICR BRE	33.3	7.3	22	2				
28 BARB LYC	33.3	3.3	10	2				
29 POLY JUN	33.3	1.0	3	2				
30 TONI COE	33.3	1.0					3	2
L LAYER								
31 CLAD ECM	100.0	4.7	6	2	1	2	7	2
32 CETR ISL	33.3	0.3	1	2				
33 CLAD COR	33.3	0.3	1	2				
34 CLAD MIT	33.3	0.3	1	2				
35 CLAD SQU	33.3	0.3	1	2				
36 LOBA LIN	33.3	0.3	1	2				
37 PELT MAL	33.3	0.3					1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	3	

PICEA ENGELMANNII-ABIES LASIOCARPA/PHYLLODOCE EMPETRIFORMIS

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 35 PAGE 2

	AVERAGE		20		20		20	
PLOT NUMBER	VALUE		8637		4583		7479	
NUMBER OF SPECIES PER PLOT	19.3		26		10		22	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
38 STER TOM	33.3	0.3					1	2

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TITLE : SA 3 PICEA ENGELMANNII-ABIES LASIOCARPA/PHYLLODOCE EMPETRIFORMIS TABLE 35

		20	20	20
PLOT NUMBER	MEAN	8637	4583	7479
TOWNSHIP & RANGE		5813	5814	5814
MERIDIAN		W 6	W 6	W 6
MAPSHEET		83L 4	83L 4	83L 4
PHYSIOGRAPHIC SUBREGION				
GEOMORPHIC SYSTEM				
ECOSECTION				
ELEVATION(MASL)	1920.0	2040	1840	1880
SLOPE(%)	14.7	28	9	7
ASPECT(DEG)		34	54	10
ENVIRONMENT/SOILS :				
ECOLOGICAL MOISTURE REGIME		M	SM	SM
NUTRIENT REGIME				
OVERLYING MATERIAL		C	C	
UNDERLYING MATERIAL				
EROSION/DEPOSITION				
SOIL SUBGROUP				
SOIL GREAT GROUP				
SOIL DRAINAGE		MW	W	W
SOLUM THICKNESS(CM)	0.0			
TYPE & DEPTH TO RESTRICT(CM)				
THICKNESS LFH(CM)	0.0			
pH-LFH	0.0			
-A	0.0			
-B	0.0			
-C	0.0			
TEXTURE-A/1				
-B/2				
-C/3				
COARSE FRAGMENTS-B(%)	0.0			
SEEPAGE(*) & MOTTLING(CM)				
ROOTING DEPTH(CM)	0.0			
VEGETATION :				
ASSOCIATION				
STAND AGE(YR)	125.0	125		
CANOPY HEIGHT(M)	0.0			
MEAN ANNUAL INCREMENT	0.0			
STRATA COVERAGE(%)-A	3.3	10	0	0
-B	46.7	40	80	20
-C	40.0	45	15	60
-G	4.0	1	1	10
-D	53.0	74	85	0
-L	6.7	11	1	8
SURFACE SUBST(%)-DEAD WOOD	1.7	3	2	0
-BEDROCK	0.7	2	0	0
-STONES	0.7	2	0	0
-MIN.SOIL	1.3	1	0	3
-ORGANIC	95.3	92	98	96
-OPEN WATER	0.0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0			
-GRAMINOIDS	0.0			
-BROWSE	0.0			

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	4	

PINUS CONTORTA/VACCINIUM MEMBRANACEUM/RUBUS PEDATUS

RESOURCE INVENTORY
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 36 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20		20		20		20		20		20		20		20		20		20		20		20		20		38		20	
			8553		8554		8640		8595		5758		5753		4587		4574		8505		8504		8527		5756		4581		F025		5763	
NUMBER OF SPECIES PER PLOT	25.7		21		15		24		28		26		31		26		31		20		24		22		19		31		37		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																																
1 PINU CON	100.0	40.4	43	2	45	2	42	2	41	2	47	2	57	2	42	2	46	2	35	2	17	2	22	2	62	2	42	2	10	1	55	2
2 PICE MAR	33.3	3.5			5	2											2	2	10	2	10	2							25	1		
3 ABIE LAS	20.0	0.5																			2	2	5	2					1	2		
4 PICE ENE	13.3	1.1	1	2																			16	2								
A2 LAYER																																
PINU CON	80.0	2.8	2	2			2	2	3	2	5	2	3	2	5	2	5	3			3	2	1	2	3	2	5	2			5	2
PICE MAR	60.0	5.0			15	2	30	2			3	2	2	2	3	2	2	2	10	2	5	2							5	2		
ABIE LAS	26.7	0.9																	5	2	3	2	5	2					1	2		
PICE ENE	13.3	0.3	4	2																			1	2								
E LAYER																																
5 BRYO FRE	6.7	1.0																											15	2		
6 ALEC SAR	6.7	0.3																											4	2		
7 CETR HAL	6.7	0.3																											5	2		
8 CETR PIN	6.7	0.3																											5	2		
9 HYPO PHY	6.7	0.3																											5	2		
10 PARM AMB	6.7	0.3																											5	2		
11 PARM HYP	6.7	0.3																											5	2		
12 USNE SCA	6.7	0.2																											3	2		
B1 LAYER																																
PICE MAR	33.3	0.8					3	2					3	2					2	2	3	2							1	2		
ABIE LAS	33.3	0.5							1	2	1	2							2	2	1	2									2	2
13 ALNU CRI	13.3	0.3	1	2																					3	2						
PINU CON	13.3	0.2															1	2									2	2				
PICE ENE	6.7	0.2																									3	2				
B2 LAYER																																
14 VACC MEM	93.3	11.3	8	2	12	2			5	2	21	2	4	2	12	2	11	2	17	2	4	2	6	2	14	2	9	2	17	2	30	2
15 LEDU GRO	80.0	19.1	10	2	40	2	3	2	15	2	20	2	31	2	40	2	40	2	40	2	30	2					12	2	5	2		
ABIE LAS	53.3	1.9							5	2	1	2	1	2					1	2	3	2	5	2					1	2	12	2
16 BETU GLA	26.7	1.9									5	2	13	2			7	2									3	2				
17 SALI PYR	20.0	0.5							3	2			1	2	3	2																
18 MENZ FER	13.3	0.5																			3	2							5	2		
19 RHOD ALB	13.3	0.5			3	2																							5	2		
20 SORB SCO	13.3	0.5															5	2					3	2								
21 LONI INV	13.3	0.3					3	2	2	2																						
PICE ENE	13.3	0.3																									3	2			1	2
22 VACC MYR	13.3	0.3							3	2											1	2										
ALNU CRI	6.7	0.8																							12	2						
PICE MAR	6.7	0.3																											4	2		
23 VIBU EDU	6.7	0.3																					5	2								
24 SALI BEB	6.7	0.2							3	2																						
25 SALI SCO	6.7	0.2																													3	2
26 SALI STO	6.7	0.2																									3	2				
PINU CON	6.7	0.1													1	2																
27 ROSA ACI	6.7	0.1																											1	2		
C LAYER																																
28 CORN CAN	100.0	5.9	7	2	9	2	13	2	7	2	4	2	5	2	3	2	3	2	5	2	2	2	7	2	6	2	7	2	5	2	5	2
29 RUBU PED	86.7	5.8	6	2	6	2	11	2	7	2	2	2	2	2	1	2	6	2	18	2	1	2	9	2	15	2			3	2		

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	4	

PINUS CONTORTA/VACCINIUM MEMBRANACEUM/RUBUS PEDATUS

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 36 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8553		20 8554		20 8640		20 8595		20 5758		20 5753		20 4587		20 4574		20 8505		20 8504		20 8527		20 5756		20 4581		38 F025		20 5763	
NUMBER OF SPECIES PER PLOT	25.7		21		15		24		28		26		31		26		31		20		24		22		19		31		37		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
30 VACC VIT	73.3	2.5	4	2	9	2	1	2	1	2	3	2	3	2	5	2	3	2	2	2	4	2							3	2		
31 LYCO ANN	66.7	1.0	3	2	1	2			1	2			1	2	1	2	1	2	2	2	1	2			3	2					1	2
32 LINN BOR	60.0	1.7	1	2	2	2	2	2	1	2													1	2	5	2	2	2	3	2	8	2
33 EMPE NIG	46.7	2.2	3	2							5	2	9	2	9	2	3	2									1	2	3	2		
34 ARNI COR	46.7	1.7					1	2	1	2	12	2	4	2									1	2					2	2	5	2
35 PETA PAL	46.7	0.5					1	2	1	2	1	2	1	2			1	2							2	2	1	2				
36 ORTH SEC	33.3	0.7	1	2															5	2			1	2					1	2	2	2
37 VACC CAE	33.3	0.5					1	2					1	2							1	2							3	2	1	2
38 EQUI SYL	33.3	0.3									1	2							1	2	1	2			1	2	1	2				
39 STRE AMP	26.7	0.8					1	2	6	2													2	2	3	2						
40 EPIL ANG	26.7	0.6							1	2							1	2							6	2					1	2
41 PYRO ASA	20.0	0.6					5	2															2	2							2	2
42 RUBU PUB	13.3	0.3							1	2															3	2						
43 ARNI LAT	13.3	0.1															1	2									1	2				
44 LIST BOR	13.3	0.1											1	2									1	2								
45 ARNI RYD	6.7	0.3																											4	2		
46 EQUI PRA	6.7	0.1							1	2																						
47 GYMN DRY	6.7	0.1					1	2																								
48 MERT PAN	6.7	0.1					1	2																								
49 PYRO CHL	6.7	0.1																													1	2
50 TIAR UNI	6.7	0.1					1	2																								
G LAYER																																
51 CALA CAN	20.0	0.5							2	2													1	2	4	2						
52 AGRO TRA	6.7	0.1																													1	2
53 CALA STR	6.7	0.1	1	2																												
54 ELYM INN	6.7	0.1																													1	2
55 POLY JUN	6.7	0.1																													1	2
D LAYER																																
56 PLEU SCH	100.0	33.5	30	2	46	2	23	2	22	2	60	2	57	2	45	2	36	2	9	2	11	2	52	2	37	2	22	2	20	2	33	2
57 PTIL CRI	100.0	20.5	60	2	17	2	12	2	17	2	10	2	12	2	3	2	8	2	37	2	30	2	26	2	30	2	2	2	40	2	4	2
58 HYLO SPL	86.7	16.5	21	2	10	2	18	2	47	2	5	2	1	2	5	2	1	2	49	2	41	2	18	2					30	2	1	2
59 DICR SCO	53.3	1.8	1	2					1	2	7	2	8	2	3	2											2	2	4	2	1	2
POLY JUN	53.3	1.0							1	2			1	2	1	2	2	2	1	2	1	2			5	2	3	2				
60 DICR POL	13.3	1.2															16	2							2	2						
61 SPHA GIR	6.7	0.3					4	2																								
62 DICR FUS	6.7	0.1																													1	2
63 LOPH POR	6.7	0.1																									2	2				
64 POHL NUT	6.7	0.1																													1	2
L LAYER																																
65 PELT APH	80.0	1.5	2	2	1	2			1	2	1	2	2	2	1	2	1	2	4	2	1	2					2	2	5	2	1	2
66 CLAD MIT	53.3	0.9					1	2			1	2	2	2	1	2	3	2									4	2	1	2	1	2
67 PELT MAL	40.0	0.6	1	2							3	2	2	2	1	2	1	2									1	2				
68 CLAD COR	40.0	0.4									1	2	1	2	1	2	1	2									1	2			1	2
69 CLAD ECM	40.0	0.4									1	2	1	2	1	2											1	2	1	2	1	2
70 CLAD CHL	26.7	0.3									1	2			1	2											1	2			1	2
71 CLAD DEF	20.0	0.3									2	2			1	2	1	2														
72 CLAD GRA	20.0	0.3											1	2			1	2									2	2				
73 CLAD CRI	13.3	0.1					1	2							1	2																

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	4	

PINUS CONTORTA/VACCINIUM MEMBRANACEUM/RUBUS PEDATUS

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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S) VIGOR (V) TABLE 36 PAGE 3

PLOT NUMBER	AVERAGE VALUE		20 8553		20 8554		20 8640		20 8595		20 5758		20 5753		20 4587		20 4574		20 8505		20 8504		20 8527		20 5756		20 4581		38 F025		20 5763	
NUMBER OF SPECIES PER PLOT	25.7		21		15		24		28		26		31		26		31		20		24		22		19		31		37		30	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
74 CLAD FIM	13.3	0.1											1	2													1	2				
75 STER TOM	13.3	0.1											1	2													1	2				
76 CETR ISL	6.7	0.1																									2	2				
77 CLAD COC	6.7	0.1															1	2														
78 CLAD PYX	6.7	0.1																									1	2				
79 CLAD RAN	6.7	0.1													1	2																
80 CLAD SQU	6.7	0.1															1	2														
81 CLAD UNC	6.7	0.1															1	2														

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : SA 4 PINUS CONTORTA/VACCINIUM MEMBRANACEUM/RUBUS PEDATUS

	MEAN															
PLOT NUMBER		20 8553	20 8554	20 8640	20 8595	20 5758	20 5753	20 4587	20 4574	20 8505	20 8504	20 8527	20 5756	20 4581	3B F025	20 5763
TOWNSHIP & RANGE		6110	62 8	63 7	63 7	63 8	63 8	6310	63 9	59 4	59 4	6212	63 8	6310	58 5	6210
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 6	83L 6	83L 7	83L 7	83L 7	83L 6	83L 6	83L 6	83L 1	83L 1	83L 5	83L 6	83L 6	83L 2	83L 6
PHYSIOGRAPHIC SUBREGION																
GEOMORPHIC SYSTEM																
ECOSECTION																
ELEVATION(MASL)	1403.1	1450	1380	1320	1360	1470	1420	1550	1360	1370	1310	1460	1310	1490	1450	1430
SLOPE(%)	9.1	2	6	4	16	3	12	2	2	2	5	34	12	2	3	36
ASPECT(DEG)		86	282	20	12	182	138		180	14	296	356	320		250	268
ENVIRONMENT/SOILS :																
ECOLOGICAL MOISTURE REGIME		M	SHG	SHG	SHG	M	M	M	M	M	SM	SHG	SHG	M	HG	M
NUTRIENT REGIME															SM	
OVERLYING MATERIAL			M	M		M	M	M	M	M	MC		M	M	MGmv	C
UNDERLYING MATERIAL															S	
EROSION/DEPOSITION																
SOIL SUBGROUP															O	
SOIL GREAT GROUP															LG	
SOIL DRAINAGE		W	MW	I	MW	MW	MW	MW	I	MW	W	MW	I	MW	P	W
SOLUM THICKNESS(CM)	26.0														26	
TYPE & DEPTH TO RESTRICT(CM)															W 21	
THICKNESS LFH(CM)	5.0														5	
pH-LFH	0.0															
-A	4.5														4.5	
-B	4.5														4.5	
-C	5.5														5.5	
TEXTURE-A/1															SL	
-B/2															SiL	
-C/3															CL	
COARSE FRAGMENTS-B(%)	1.0														1	
SEEPAGE(*) & MOTTLING(CM)															* 14	
ROOTING DEPTH(CM)	15.0														15	
VEGETATION :																
ASSOCIATION																
STAND AGE(YR)	105.8		172	87	81	87	93	130	139			123	119	68		84
CANOPY HEIGHT(M)	18.3	18		19	24	14	16	14	15			25	28	14	14	18
MEAN ANNUAL INCREMENT	0.0															
STRATA COVERAGE(%)-A	56.9	50	60	80	45	60	65	50	55	60	40	50	65	50	40	60
-B	30.9	10	45	10	30	45	45	45	60	45	40	15	15	15	25	40
-C	29.8	36	40	30	25	30	30	30	20	50	15	30	50	20	20	20
-G	0.7	1	0	0	2	0	0	0	0	0	0	1	5	0	0	2
-D	73.8	92	93	78	90	85	85	51	14	86	85	95	95	33	85	35
-L	5.1	3	2	2	1	10	10	9	11	4	1	0	0	17	5	5
SURFACE SUBST(%)-DEAD WOOD	6.2	7	10	5	5	5	5	3	3	1	15	10	10	2	10	3
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-ORGANIC	93.9	93	90	98	95	95	95	97	97	99	85	90	90	96	90	97
-OPEN WATER	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0															
-GRAMINOIDS	0.0															
-BROWSE	0.0															

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	5	

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 37 PAGE 1

PICEA MARIANA-PINUS CONTORTA/VACCINIUM MEMBRANACEUM

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		20 7487		20 8642		20 8643		20 8569	
NUMBER OF SPECIES PER PLOT	21.3		21		19		23		22	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 PICE MAR	100.0	31.8	30	2	41	2	33	2	23	2
2 PINU CON	100.0	3.3	2	2	5	2	1	2	5	2
3 ABIE LAS	50.0	4.0			15	2	1	2		
A2 LAYER										
PICE MAR	100.0	7.5	8	2	5	2	7	2	10	2
ABIE LAS	50.0	3.5			10	2	4	2		
PINU CON	25.0	1.3							5	2
B1 LAYER										
PICE MAR	75.0	2.0	5	2			1	2	2	2
ABIE LAS	25.0	0.3					1	2		
PINU CON	25.0	0.3							1	2
B2 LAYER										
4 LEDU GRO	100.0	25.0	10	2	15	2	15	2	60	2
5 VACC MEM	75.0	5.8			5	2	10	2	8	2
ABIE LAS	50.0	2.0			3	2	5	2		
PICE MAR	50.0	1.3	3	2					2	2
6 ROSA ACI	50.0	0.8			2	2	1	2		
7 VACC MYR	25.0	0.5							2	2
PINU CON	25.0	0.3							1	2
C LAYER										
8 VACC VIT	100.0	5.0	5	2	4	2	5	2	6	2
9 CORN CAN	100.0	4.8	3	2	4	2	7	2	5	2
10 LINN BOR	100.0	1.0	1	2	1	2	1	2	1	2
11 RUBU PED	75.0	1.0			2	2	1	2	1	2
12 ARNI COR	25.0	0.3					1	2		
13 EQUI ARV	25.0	0.3					1	2		
14 GAUL HIS	25.0	0.3			1	2				
15 PETA PAL	25.0	0.3					1	2		
16 VACC CAE	25.0	0.3	1	2						
D LAYER										
17 PLEU SCH	100.0	55.0	69	2	60	2	25	2	66	2
18 PTIL CRI	100.0	18.8	8	2	10	2	50	2	7	2
19 HYLO SPL	100.0	14.3	5	2	25	2	10	2	17	2
20 DICR SCO	50.0	1.0	3	2			1	2		
21 DICR POL	50.0	0.5			1	2			1	2
22 POLY JUN	25.0	0.3	1	2						
23 SPHA NEM	25.0	0.3			1	2				
L LAYER										
24 PELT APH	75.0	1.8	5	2			1	2	1	2
25 PELT MAL	50.0	1.0	3	2					1	2
26 CLAD MIT	50.0	0.5	1	2					1	2
27 CLAD ECM	25.0	0.3	1	2						
28 CLAD RAN	25.0	0.3	1	2						
29 STER TOM	25.0	0.3	1	2						

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 37

TITLE : SA 5 PICEA MARIANA-PINUS CONTORTA/VACCINIUM MEMBRANACEUM

PLOT NUMBER	MEAN	20 7487	20 8642	20 8643	20 8569
TOWNSHIP & RANGE		60 8	62 7	62 8	62 7
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L 3	83L 6	83L 6	83L 6
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	1397.5	1390	1400	1380	1420
SLOPE(%)	3.0	5	2	2	3
ASPECT(DEG)		270	110	10	280
ENVIRONMENT/SOILS :					
ECOLOGICAL MOISTURE REGIME		M	HG	SHG	SHG
NUTRIENT REGIME					
OVERLYING MATERIAL		X	M	M	M
UNDERLYING MATERIAL					
EROSION/DEPOSITION					
SOIL SUBGROUP					
SOIL GREAT GROUP					
SOIL DRAINAGE		MW	I	MW	I
SOLUM THICKNESS(CM)	0.0				
TYPE & DEPTH TO RESTRICT(CM)					
THICKNESS LFH(CM)	0.0				
pH-LFH	0.0				
-A	0.0				
-B	0.0				
-C	0.0				
TEXTURE-A/1					
-B/2					
-C/3					
COARSE FRAGMENTS-B(%)	0.0				
SEEPAGE(*) & MOTTLING(CM)					
ROOTING DEPTH(CM)	0.0				
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	172.0		195		149
CANOPY HEIGHT(M)	18.3	16	16	21	20
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	48.8	40	70	45	40
-B	30.0	15	20	20	65
-C	19.5	8	20	25	25
-G	0.0	0	0	0	0
-D	91.8	91	91	90	95
-L	3.3	4	4	1	4
SURFACE SUBST(%)-DEAD WOOD	5.8	5	5	10	3
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0
-ORGANIC	94.3	95	95	90	97
-OPEN WATER	0.0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	6	

PICEA ENGELMANNIIXGLAUCA/HYLOCOMIUM SPLENDENS

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 38 PAGE 1

PLOT NUMBER	AVERAGE VALUE		208546		208625		207500		208628	
NUMBER OF SPECIES PER PLOT	27.0		18		29		38		23	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER										
1 ABIE LAS	75.0	9.0	5	2	30	2	1	2		
2 PICE ENE	50.0	18.8	50	2			25	2		
3 PICE GLA	25.0	11.8							47	2
4 PICE ENG	25.0	2.0			8	2				
A2 LAYER										
ABIE LAS	75.0	5.5	10	2	3	2	9	2		
PICE ENE	25.0	1.3					5	2		
PICE GLA	25.0	0.8							3	2
PICE ENG	25.0	0.3			1	2				
5 PINU CON	25.0	0.3			1	+				
B1 LAYER										
ABIE LAS	75.0	4.3	3	2	7	2	7	2		
PICE GLA	25.0	0.3							1	2
B2 LAYER										
ABIE LAS	75.0	13.3	15	2	8	2	30	2		
6 VACC MEM	50.0	6.0			8	2	16	2		
7 LONI INV	25.0	3.8							15	2
8 SHEP CAN	25.0	1.0							4	2
9 ROSA ACI	25.0	0.8							3	2
PICE GLA	25.0	0.5							2	2
10 SALI GLA	25.0	0.5					2	2		
PICE ENE	25.0	0.3					1	2		
C LAYER										
11 CORN CAN	75.0	1.5	1	2	2	2	3	2		
12 PETA PAL	75.0	1.5			1	2	2	2	3	2
13 ORTH SEC	75.0	1.3	1	2			2	2	2	2
14 EQUI SCI	75.0	1.0			1	2	1	2	2	2
15 MITE NUD	75.0	0.8	1	2			1	2	1	2
16 EQUI ARV	50.0	1.5					1	2	5	2
17 EMPE NIG	50.0	1.3			3	2	2	2		
18 EQUI SYL	50.0	1.3	1	2			4	2		
19 LINN BOR	50.0	1.0	3	2					1	2
20 RUBU PUB	50.0	0.5					1	2	1	2
21 MERT PAN	25.0	1.0							4	2
22 ARNI LAT	25.0	0.5			2	2				
23 EPIL ANG	25.0	0.5							2	2
24 LATH OCH	25.0	0.5							2	2
25 VALE DIO	25.0	0.5					2	2		
26 ARNI COR	25.0	0.3					1	2		
27 FRAG VIR	25.0	0.3							1	2
28 LIST COR	25.0	0.3					1	2		
29 POLY VIV	25.0	0.3					1	2		
30 PYRO ASA	25.0	0.3	1	2						
31 PYRO CHL	25.0	0.3					1	2		
32 RUBU PED	25.0	0.3			1	2				
33 VACC CAE	25.0	0.3					1	2		
34 VACC VIT	25.0	0.3			1	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	6	

PICEA ENGELMANNIIXGLAUCA/HYLOCOMIUM SPLENDENS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		20 8546		20 8625		20 7500		20 8628	
NUMBER OF SPECIES PER PLOT	27.0		18		29		38		23	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV
G LAYER										
35 CALA CAN	25.0	0.3			1	2				
36 CALA STR	25.0	0.3					1	2		
37 ELYM INN	25.0	0.3							1	2
D LAYER										
38 HYLO SPL	100.0	22.0	68	2	7	2	11	2	2	2
39 PLEU SCH	100.0	14.8	14	2	34	2	10	2	1	2
40 PTIL CRI	100.0	7.5	6	2	21	2	1	2	2	2
41 DICR SCO	75.0	1.5	1	2	4	2	1	2		
42 POLY JUN	50.0	2.5			6	2			4	2
43 DICR FUS	25.0	3.5					14	2		
44 AULA PAL	25.0	3.3					13	2		
45 BAZZ TRI	25.0	3.3					13	2		
46 POHL NUT	25.0	0.8			3	2				
47 TOME NIT	25.0	0.5					2	2		
48 EURH PUL	25.0	0.3	1	2						
L LAYER										
49 PELT APH	75.0	3.8	3	2	11	2	1	2		
50 CLAD CHL	75.0	0.8	1	2	1	2	1	2		
51 PELT MAL	50.0	0.8			2	2	1	2		
52 CLAD CEN	50.0	0.5			1	2	1	2		
53 CLAD ECM	50.0	0.5			1	2	1	2		
54 CLAD COR	25.0	0.3			1	2				
55 CLAD DEF	25.0	0.3			1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : SA 6 PICEA ENGELMANNIIXGLAUCA/HYLOCOMIUM SPLENDENS TABLE 38

PLOT NUMBER	MEAN	20 8546	20 8625	20 7500	20 8628
TOWNSHIP & RANGE		6110	5813	5913	5913
MERIDIAN		W 6	W 6	W 6	W 6
MAPSHEET		83L 6	83L 4	83L 4	83L 4
PHYSIOGRAPHIC SUBREGION					
GEOMORPHIC SYSTEM					
ECOSECTION					
ELEVATION(MASL)	1462.5	1420	1580	1490	1360
SLOPE(%)	6.5	13	12	1	0
ASPECT(DEG)		284	326	70	
ENVIRONMENT/SOILS :					
ECOLOGICAL MOISTURE REGIME		M	SHG	M	HG
NUTRIENT REGIME					
OVERLYING MATERIAL		C	M	Q	F
UNDERLYING MATERIAL					
EROSION/DEPOSITION					
SOIL SUBGROUP					
SOIL GREAT GROUP					
SOIL DRAINAGE		W	MW	W	MW
SOLUM THICKNESS(CM)	0.0				
TYPE & DEPTH TO RESTRICT(CM)					
THICKNESS LFH(CM)	0.0				
pH-LFH	0.0				
-A	0.0				
-B	0.0				
-C	0.0				
TEXTURE-A/1					
-B/2					
-C/3					
COARSE FRAGMENTS-B(%)	0.0				
SEEPAGE(*) & MOTTLING(CM)					
ROOTING DEPTH(CM)	0.0				
VEGETATION :					
ASSOCIATION					
STAND AGE(YR)	285.0				285
CANOPY HEIGHT(M)	26.5		23		30
MEAN ANNUAL INCREMENT	0.0				
STRATA COVERAGE(%)-A	50.0	65	45	40	50
-B	22.5	15	15	35	25
-C	21.3	5	15	35	30
-G	0.5	0	1	1	0
-D	56.3	81	79	55	10
-L	6.3	4	16	5	0
SURFACE SUBST(%)-DEAD WOOD	12.5	15	10	15	10
-BEDROCK	0.0	0	0	0	0
-STONES	0.0	0	0	0	0
-MIN.SOIL	10.0	0	0	0	40
-ORGANIC	77.5	85	90	85	50
-OPEN WATER	0.0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0				
-GRAMINOIDS	0.0				
-BROWSE	0.0				

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	7	

PINUS CONTORTA/ELYMUS INNOVATUS

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 39 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 8519		20 8509		20 8549		20 8502		20 8548		GP 3110		3G P054	
NUMBER OF SPECIES PER PLOT	27.3		26		18		31		36		27		32		21	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 PINU CON	100.0	37.6	57	2	16	2	25	2	40	2	45	2	45	3	35	2
2 PICE ENE	14.3	1.4									10	2				
A2 LAYER																
PINU CON	85.7	4.7	3	2	3	2	10	2			10	2	5	3	2	2
PICE ENE	14.3	1.0									7	2				
3 POPU BAL	14.3	0.4	3	2												
4 PICE MAR	14.3	0.1													1	2
E LAYER																
5 BRYO FUS	14.3	0.1											.5	3		
6 CETR HAL	14.3	0.1											.5	3		
7 CETR PIN	14.3	0.1											.5	3		
8 HYPO ENT	14.3	0.1											.5	3		
9 HYPO PHY	14.3	0.1											.5	3		
10 PARM HYP	14.3	0.1											.5	3		
11 PARM SUL	14.3	0.1											.5	3		
12 PLAT GLA	14.3	0.1											.5	3		
13 USNE ALP	14.3	0.1											.5	3		
14 USNE SOR	14.3	0.1											.5	3		
15 USNE SUB	14.3	0.1											.5	3		
B1 LAYER																
16 ALNU CRI	42.9	6.6	5	2			40	2			1	2				
PINU CON	42.9	1.7					1	2	10	2	1	2				
POPU BAL	28.6	0.4	2	2							1	2				
PICE ENE	28.6	0.3					1	2			1	2				
17 SALI SCO	14.3	0.1							1	2						
B2 LAYER																
18 ROSA ACI	71.4	3.0	7	2			3	2			3	2	5	3	3	2
ALNU CRI	57.1	6.0	5	2	15	2	20	2							2	2
19 SPIR BET	42.9	2.0			5	2							5	3	4	2
PINU CON	42.9	1.3			4	2			4	2	1	2				
20 VIBU EDU	42.9	0.9	5	2									.5	3	1	2
21 VACC MEM	28.6	0.6							1	2					3	2
22 JUNI COM	14.3	1.0							7	2						
23 LEDU GRO	14.3	1.0									7	2				
24 RUBU IDA	14.3	0.7					5	2								
25 SHEP CAN	14.3	0.7									5	2				
SALI SCO	14.3	0.6							4	2						
26 ABIE LAS	14.3	0.3							2	2						
27 PICE GLA	14.3	0.1											5	3		
28 VACC MYR	14.3	0.1									1	2				
C LAYER																
29 LINN BOR	85.7	3.3	1	2	4	2	2	2	7	2	4	2	5	3		
30 ARNI COR	85.7	3.0	3	2			6	2	3	1	1	2	6	3	2	2
31 CORN CAN	71.4	3.7	1	2					5	2	3	2	10	3	7	2
32 EPIL ANG	71.4	3.3	7	2			8	2	2	2			5	3	1	2
33 PYRO ASA	57.1	3.1	4	2			13	2					2	3	3	2
34 VACC VIT	42.9	4.3					1	2	4	2	25	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	7	

PINUS CONTORTA/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984
TABLE 39 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 8519		20 8509		20 8549		20 8502		20 8548		GP 3110		3G P054	
NUMBER OF SPECIES PER PLOT	27.3		26		18		31		36		27		32		21	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
35 MERT PAN	42.9	0.7	1	2			3	2	1	2						
36 MAIA CAN	42.9	0.6	1	2									.5	3	3	2
37 ARCT UVA	28.6	4.4			30	2			1	2						
38 ASTE CON	28.6	3.6	5	2									20	3		
39 VACC CAE	28.6	0.7			2	2					3	2				
40 LATH OCH	28.6	0.6	3	2							1	2				
41 ORTH SEC	28.6	0.4	2	2			1	2								
42 ANTE MED	28.6	0.3					1	2	1	2						
43 ANTE NEG	28.6	0.3			1	2	1	2								
44 EMPE NIG	14.3	0.9							6	2						
45 ANTE RAC	14.3	0.1							1	2						
46 ARNI LAT	14.3	0.1					1	2								
47 CAMP LAS	14.3	0.1							1	2						
48 CAST MIN	14.3	0.1							1	2						
49 EQUI ARV	14.3	0.1	1	2												
50 ERIG PER	14.3	0.1							1	2						
51 GALI BOR	14.3	0.1			1	2										
52 GEOC LIV	14.3	0.1									1	2				
53 HEDY ALP	14.3	0.1							1	2						
54 HIER UMB	14.3	0.1			1	2										
55 PETA PAL	14.3	0.1											.5	3		
56 SALI SPP	14.3	0.1													1	2
57 SOLI SPP	14.3	0.1			1	2										
58 VIOL REN	14.3	0.1	1	2												
G LAYER																
59 ELYM INN	85.7	3.6	7	2	4	2	2	2	4	2	3	2			5	2
60 CALA STR	57.1	0.6	1	2			1	2	1	2					1	2
61 CALA CAN	14.3	0.3											2	3		
62 CARE ROS	14.3	0.1					1	2								
63 CARE SIC	14.3	0.1	1	2												
64 KOBR MYO	14.3	0.1							1	2						
65 LUZU PAR	14.3	0.1					1	2								
D LAYER																
66 PLEU SCH	71.4	15.9					6	2	2	2	74	2	10	3	19	2
67 POLY JUN	57.1	1.1	1	2	1	2	5	2	1	2						
68 POHL NUT	57.1	0.7			1	2	2	2	1	2					1	2
69 DICR FUS	57.1	0.5	1	2			1	2					.5	3	1	2
70 PTIL CRI	42.9	6.0					6	2	1	2					35	2
71 HYLO SPL	42.9	4.0							4	2	6	2			18	2
72 DICR ACU	14.3	0.1											.5	3		
73 DICR BRE	14.3	0.1			1	2										
74 DICR POL	14.3	0.1									1	2				
75 DICR SCO	14.3	0.1							1	2						
76 PTIL PUL	14.3	0.1											.5	3		
L LAYER																
77 PELT APH	57.1	1.8	2	2					2	2	8	2	.5	3		
78 PELT MAL	42.9	1.0			4	2	2	2	1	2						
79 CLAD MIT	28.6	0.3							1	2	1	2				

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	7	

PINUS CONTORTA/ELYMUS INNOVATUS

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 39 PAGE 3

PLOT NUMBER	AVERAGE VALUE		20 8519		20 8509		20 8549		20 8502		20 8548		GP 3110		3G P054	
NUMBER OF SPECIES PER PLOT	27.3		26		18		31		36		27		32		21	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
80 CLAD CON	28.6	0.2			1	2							.5	3		
81 STER TOM	14.3	0.4							3	2						
82 CLAD CEN	14.3	0.1					1	2								
83 CLAD COR	14.3	0.1							1	2						
84 CLAD CRI	14.3	0.1					1	2								
85 CLAD GRA	14.3	0.1					1	2								
86 CLAD RAN	14.3	0.1									1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 39

TITLE : SA 7 PINUS CONTORTA/ELYMUS INNOVATUS

	MEAN	20	20	20	20	20	GP	3G
PLOT NUMBER		8519	8509	8549	8502	8548	3110	P054
TOWNSHIP & RANGE		61 9	6212	6110	6010	6110	61 2	6410
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 6	83L 5	83L 6	83L 3	83L 6	83L 8	83L 11
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	1421.4	1450	1340	1480	1680	1340	1330	1330
SLOPE(%)	33.3	58	49	15	18	24	32	37
ASPECT(DEG)		174	235	220	250	204	240	184
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		SX	SM	SX	X	SM	SX	SM
NUTRIENT REGIME							SM	SM
OVERLYING MATERIAL		C	MC	C		C	M	Cv
UNDERLYING MATERIAL								R
EROSION/DEPOSITION								
SOIL SUBGROUP							O	
SOIL GREAT GROUP							GL	
SOIL DRAINAGE		R	W	R	R	R	R	MW
SOLUM THICKNESS(CM)	15.0						15	
TYPE & DEPTH TO RESTRICT(CM)								
THICKNESS LFH(CM)	5.0						5	
pH-LFH	3.9						3.9	
-A	3.7						3.7	
-B	5.1						5.1	
-C	7.3						6.7	8.0
TEXTURE-A/1							L	
-B/2							CL	
-C/3							CL	SCL
COARSE FRAGMENTS-B(%)	35.0							35
SEEPAGE(*) & MOTTLING(CM)								*
ROOTING DEPTH(CM)	0.0							
VEGETATION :								
ASSOCIATION								
STAND AGE(YR)	97.7		93				80	120
CANOPY HEIGHT(M)	21.8	26	19			23	15	26
MEAN ANNUAL INCREMENT	0.0							
STRATA COVERAGE(%)-A	42.9	55	20	35	40	60	50	40
-B	23.9	15	25	65	25	17	10	10
-C	30.7	25	40	25	27	35	48	15
-G	5.4	15	5	3	5	3	2	5
-D	24.6	0	0	10	2	75	10	75
-L	5.0	2	5	5	8	10	5	0
SURFACE SUBST(%)-DEAD WOOD	6.0	3	10	2	5	2	15	5
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0
-MIN.SOIL	0.6	0	0	2	2	0	0	0
-ORGANIC	91.7	85	90	96	93	98	85	95
-OPEN WATER	0.0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0							
-GRAMINOIDS	0.0							
-BROWSE	0.0							

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	8	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 40 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 7499		20 8542		20 8626		20 7472		20 5759		20 8512		20 7483		20 7478		20 4576		20 5760		20 4586		20 4585		20 5761		20 4575		20 5757	
NUMBER OF SPECIES PER PLOT	23.9		20		20		14		25		18		10		18		21		19		45		26		21		35		34		26	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																																
1 PICE ENE	12.5	0.6			2	2															7	2										
2 PICE MAR	6.3	0.5							8	2																						
3 PINU CON	6.3	0.1																			2	2										
A2 LAYER																																
PICE ENE	6.3	0.2																			3	2										
PINU CON	6.3	0.1																			2	2										
B1 LAYER																																
PICE MAR	18.8	0.6							2	2													7	2	1	2						
PICE ENE	12.5	0.4			1	2															5	2										
PINU CON	6.3	0.2																			3	2										
B2 LAYER																																
4 BETU GLA	93.8	17.4	15	2	20	2	10	2	10	2	10	2	42	2	3	2	3	2	15	2	30	2	25	2	15	2	11	2	20	2		
5 SALI BAA	37.5	4.0	10	2	2	2	2	2	30	2					5	2	15	2														
6 SALI GLA	31.3	4.9					5	2													12	2					12	2	15	2	35	2
PICE MAR	31.3	0.6							2	2			1	2	2	2							3	2	2	2						
7 SALI BAR	25.0	7.2									35	2									30	2							25	2	25	2
8 SALI ATH	18.8	4.5			40	2							17	2																		
9 SALI MYR	18.8	3.4													10	2			5	2												
10 SALI SPP	12.5	4.2							2	2																	65	2				
11 SALI PED	12.5	1.3																					10	2	10	2						
PINU CON	12.5	0.1							1	2																						
12 SALI PLA	6.3	1.3			20	2																										
PICE ENE	6.3	0.3																			5	2										
C LAYER																																
13 RUBU ARC	81.3	1.7	1	2	2	2			2	2	2	2					2	2	4	2	1	2	1	2	1	2	3	2	3	2	4	2
14 POLE PUL	56.3	1.2			1	2					2	2							6	2			1	2	1	2	1	2	2	2	3	2
15 VALE DIO	50.0	1.3	2	2					1	2	1	2					3	2			1	2					6	2	3	2	4	2
16 MITE NUC	43.8	0.8	1	2	2	2													3	2	2	2	1	2	1	2			2	2		
17 POLY VIV	43.8	0.4							1	2	1	2			1	2			1	2			1	2			1	2	1	2		
18 MERT PAN	31.3	0.9																			1	2					6	2	5	2	1	2
19 DELP GLA	31.3	0.8																	1	2							3	2	5	2	1	2
20 PETA SAG	31.3	0.8									4	2							1	2									1	2	3	2
21 GALI TRI	31.3	0.5															1	2					1	2	2	2	2	2				
22 GALI BOR	31.3	0.4									1	2					1	2			1	2							2	2	1	2
23 ACHI MIL	25.0	0.4																			1	2					2	2	1	2		
24 EPIL ANG	25.0	0.4																			1	2					2	2	2	2		
25 SENE TRI	25.0	0.4							3	2													1	2	1	2	2	2				
26 GEUM TRI	18.8	1.8																									7	2	12	2	10	2
27 VACC CAE	18.8	0.6																			6	2					3	2				
28 EQUI SCI	18.8	0.3													2	2					1	2					1	2				
29 OXYC MIC	18.8	0.3													2	2							2	2	1	2						
30 SENE IND	18.8	0.3																	1	2											2	2
31 VIOL PAL	18.8	0.2			1	2			1	2							1	2														
32 GEUM ALE	12.5	0.6	2	2													7	2														
33 KALM POL	12.5	0.3																					2	2	3	2						
34 MENY TRI	12.5	0.3																					3	2	2	2						
35 POTE PAL	12.5	0.3																					2	2	3	2						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	8	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
02:01:08 NOV 22, 1984
TABLE 40 PAGE 2

PLOT NUMBER	AVERAGE VALUE		20 7499		20 8542		20 8626		20 7472		20 5759		20 8512		20 7483		20 7478		20 4576		20 5760		20 4586		20 4585		20 5761		20 4575		20 5757	
NUMBER OF SPECIES PER PLOT	23.9		20		20		14		25		18		10		18		21		19		45		26		21		35		34		26	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
36 VERO ALP	12.5	0.3							3	2																					2	2
37 EQUI ARV	12.5	0.2					1	2													2	2										
38 PETA PAL	12.5	0.2																			1	2							2	2		
39 VIOL ORB	12.5	0.2									2	2																	1	2		
40 EQUI SYL	12.5	0.1																			1	2					1	2				
41 FRAG VIR	12.5	0.1																									1	2	1	2		
42 ORTH SEC	12.5	0.1							1	2											1	2										
43 PENS PRO	12.5	0.1									1	2																				
44 PYRO CHL	12.5	0.1			1	2									1	2																
45 STEL LOG	12.5	0.1									1	2																			1	2
46 ANEM PAR	6.3	0.3	4	2																												
47 CORN CAN	6.3	0.3																			4	2										
48 LINN BOR	6.3	0.3																			5	2										
49 SOLI CAN	6.3	0.3																											4	2		
50 THAL VEN	6.3	0.3																											4	2		
51 ARNI CHA	6.3	0.1							1	2																						
52 ARNI COR	6.3	0.1																			1	2										
53 ASTE PUN	6.3	0.1															2	2														
54 CAST MIN	6.3	0.1																									1	2				
55 EPIL PAL	6.3	0.1															2	2														
56 EQUI HYE	6.3	0.1	1	2																												
57 EQUI PRA	6.3	0.1							1	2																						
58 GALI LAB	6.3	0.1																	2	2												
59 GEUM RIV	6.3	0.1			2	2																										
60 HIER UMB	6.3	0.1																													1	2
61 PARN FIM	6.3	0.1																									1	2				
62 PEDI SPP	6.3	0.1																			2	2										
63 SELA SEL	6.3	0.1	1	2																												
64 SMIL TRI	6.3	0.1																					1	2								
65 SPIR ROM	6.3	0.1																							1	2						
66 STEL CAL	6.3	0.1													1	2																
67 VACC VIT	6.3	0.1																			1	2										
68 VIOL REN	6.3	0.1																			1	2										
G LAYER																																
69 CARE AQU	87.5	11.1	10	2	11	2	13	2	17	2	20	2	6	2	15	2	46	2	9	2			2	2			4	2	11	2	10	2
70 DESC CES	62.5	1.8	1	2	1	2	2	2			1	2	1	2					7	2							1	2	7	2	4	2
71 CARE GYN	43.8	1.1	1	2	2	2	2	2					3	2	7	2					1	2										
72 CARE VAG	37.5	1.1																	2	2	6	2					3	2	3	2	1	2
73 CARE MIC	25.0	1.8	7	2					11	2													2	2	8	2						
74 CARE PEN	25.0	0.9	1	2					10	2													3	2	1	2						
75 SCIR CAE	18.8	1.5	10	2											11	2											3	2				
76 CALA CAN	18.8	0.4															3	2					1	2			2	2				
77 CARE BRU	12.5	0.8									4	2					8	2														
78 AGRO TRA	12.5	0.4															5	2													1	2
79 ELYM INN	12.5	0.3																			4	2									1	2
80 CALA STR	12.5	0.1			1	2																										
81 ERIO VIR	12.5	0.1																					1	2	1	2						
82 CALA SPP	6.3	1.2							19	2																						

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	8	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 40

PLOT NUMBER	AVERAGE VALUE		20 7499		20 8542		20 8626		20 7472		20 5759		20 8512		20 7483		20 7478		20 4576		20 5760		20 4586		20 4585		20 5761		20 4575		20 5757	
NUMBER OF SPECIES PER PLOT	23.9		20		20		14		25		18		10		18		21		19		45		26		21		35		34		26	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
83 TRIS SPI	6.3	0.3																	4	2												
84 POA PRA	6.3	0.2															3	2														
85 CARE CHO	6.3	0.1																					2	2								
86 CARE DIA	6.3	0.1																							1	2						
87 CARE SIC	6.3	0.1																			1	2										
88 HIER ODO	6.3	0.1															1	2														
89 LUZU PAR	6.3	0.1																													1	2
90 PHLE COM	6.3	0.1																													1	2
91 POA COM	6.3	0.1																									1	2				
D LAYER																																
92 AULA PAL	93.8	15.3	1	2	12	2	13	2	14	2			1	2	9	2	33	2	5	2	17	2	2	2	3	2	30	2	31	2	17	2
93 TOME NIT	87.5	16.2	56	2	38	2	37	2	5	2	3	2	2	2	24	2			2	2			3	2	6	2	20	2	12	2	41	2
94 SPHA WAR	81.3	28.4	28	2	41	2	8	2			40	2			45	2	8	2	63	2	10	2	70	2	90	2	18	2	12	2	22	2
95 DREP REV	37.5	1.4	1	2	4	2	1	2	5	2					7	2							4	2								
96 PALU SQU	25.0	2.6					37	2	2	2			1	2					1	2												
97 PLAG ELL	25.0	1.4															7	2	3	2									2	2	10	2
98 POLY JUN	25.0	1.4																			1	2					1	2	3	2		
99 HYLO SPL	18.8	2.8																			33	2					8	2				
100 SPHA ANG	12.5	9.3							52	2			96	2																		
101 DICR SCO	12.5	0.6																			8	2							1	2		
102 PLEU SCH	12.5	0.5									3	2									5	2										
103 CLIM DEN	12.5	0.4															4	2									3	2				
104 BRYU PSE	12.5	0.1															1	2											1	2		
105 CALL GIG	6.3	0.3					5	2																								
106 DICR POL	6.3	0.3									4	2																				
107 CAMP STE	6.3	0.1					1	2																								
108 CATO NIG	6.3	0.1													2	2																
109 DICR UND	6.3	0.1																														
110 DREP UNC	6.3	0.1	2	2																												
111 LOPH BIN	6.3	0.1																									1	2				
112 MNIU AFF	6.3	0.1													2	2																
113 POHL NUT	6.3	0.1																					1	2								
L LAYER																																
114 PELT APH	31.3	0.6																			2	2					3	2	1	2	1	2
115 PELT MAL	25.0	0.4																			1	2					4	2	1	2		
116 CLAD COR	12.5	0.1																			1	2							1	2		
117 CLAD ECM	12.5	0.1																			1	2										
118 CLAD MIT	12.5	0.1																			1	2										
119 CETR CUC	6.3	0.1																														
120 CLAD CEN	6.3	0.1																			1	2										
121 CLAD CHL	6.3	0.1																														
122 CLAD GRA	6.3	0.1																											1	2		

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  LEVEL    |  ZONE   |ASSC|TYPE |                                                                           RESOURCE INVENTORY
---------------------------------|               BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP                    EDMONTON, ALBERTA
ECOSYM UNIT|SA       | 8  |     |                                                               02:01:08      NOV 22, 1984
           |         |    |     |   PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)  TABLE 40  PAGE  4
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                                |   20|
PLOT NUMBER                     | 7486|
--------------------------------|-----|
NUMBER OF SPECIES PER PLOT      |   31|
--------------------------------|-----|
SPECIES                         |%C SV|
                                |     |
      A1 LAYER                  |-----|
  1 PICE ENE                    |     |
  2 PICE MAR                    |     |
  3 PINU CON                    |     |
      A2 LAYER                  |-----|
    PICE ENE                    |     |
    PINU CON                    |     |
      B1 LAYER                  |-----|
    PICE MAR                    |     |
    PICE ENE                    |     |
    PINU CON                    |     |
      B2 LAYER                  |-----|
  4 BETU GLA                    |50  2|
  5 SALI BAA                    |     |
  6 SALI GLA                    |     |
    PICE MAR                    |     |
  7 SALI BAR                    |     |
  8 SALI ATH                    |15  2|
  9 SALI MYR                    |40  2|
 10 SALI SPP                    |     |
 11 SALI PED                    |     |
    PINU CON                    |  1 2|
 12 SALI PLA                    |     |
    PICE ENE                    |     |
      C  LAYER                  |-----|
 13 RUBU ARC                    |  1 2|
 14 POLE PUL                    |  2 2|
 15 VALE DIO                    |     |
 16 MITE NUD                    |     |
 17 POLY VIV                    |     |
 18 MERT PAN                    |  1 2|
 19 DELP GLA                    |  2 2|
 20 PETA SAG                    |  3 2|
 21 GALI TRI                    |  2 2|
 22 GALI BOR                    |     |
 23 ACHI MIL                    |  2 2|
 24 EPIL ANG                    |  1 2|
 25 SENE TRI                    |     |
 26 GEUM TRI                    |     |
 27 VACC CAE                    |  1 2|
 28 EQUI SCI                    |     |
 29 OXYC MIC                    |     |
 30 SENE IND                    |  1 2|
 31 VIOL PAL                    |     |
 32 GEUM ALE                    |     |
 33 KALM POL                    |     |
 34 MENY TRI                    |     |
 35 POTE PAL                    |     |
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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	8	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 40 PAGE 5

	20	
PLOT NUMBER	7486	
NUMBER OF SPECIES PER PLOT	31	
SPECIES	%C	SV
36 VERO ALP		
37 EQUI ARV		
38 PETA PAL		
39 VIOL ORB		
40 EQUI SYL		
41 FRAG VIR		
42 ORTH SEC		
43 PENS PRO	1	2
44 PYRO CHL		
45 STEL LOG		
46 ANEM PAR		
47 CORN CAN		
48 LINN BOR		
49 SOLI CAN		
50 THAL VEN		
51 ARNI CHA		
52 ARNI COR		
53 ASTE PUN		
54 CAST MIN		
55 EPIL PAL		
56 EQUI HYE		
57 EQUI PRA		
58 GALI LAB		
59 GEUM RIV		
60 HIER UMB		
61 PARN FIM		
62 PEDI SPP		
63 SELA SEL		
64 SMIL TRI		
65 SPIR ROM		
66 STEL CAL		
67 VACC VIT		
68 VIOL REN		
G LAYER		
69 CARE AQU	4	2
70 DESC CES	4	2
71 CARE GYN	1	2
72 CARE VAG	3	2
73 CARE MIC		
74 CARE PEN		
75 SCIR CAE		
76 CALA CAN		
77 CARE BRU		
78 AGRO TRA		
73 ELYM INN		
80 CALA STR	1	2
81 ERIO VIR		
82 CALA SPP		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	8	

BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 40 PAGE 6

	20	
PLOT NUMBER	7486	
NUMBER OF SPECIES PER PLOT	31	
SPECIES	%C	SV
83 TRIS SPI		
84 POA PRA		
85 CARE CHO		
86 CARE DIA		
87 CARE SIC		
88 HIER ODO		
89 LUZU PAR		
90 PHLE COM		
91 POA COM		
D LAYER	-----	
92 AULA PAL	56	2
93 TOME NIT	10	2
94 SPHA WAR		
95 DREP REV		
96 PALU SQU		
97 PLAG ELL		
98 POLY JUN	17	2
99 HYLO SPL	3	2
100 SPHA ANG		
101 DICR SCO		
102 PLEU SCH		
103 CLIM DEN		
104 BRYU PSE		
105 CALL GIG		
106 DICR POL		
107 CAMP STE		
108 CATO NIG		
109 DICR UND	2	2
110 DREP UNC		
111 LOPH BIN		
112 MNIU AFF		
113 POHL NUT		
L LAYER	-----	
114 PELT APH	2	2
115 PELT MAL	1	2
116 CLAD COR		
117 CLAD ECM	1	2
118 CLAD MIT	1	2
119 CETR CUC	1	2
120 CLAD CEN		
121 CLAD CHL	2	2
122 CLAD GRA		

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ENVIRONMENT/SOILS-VEGETATION TABLES

RESOURCE INVENTORY
TABLE 40

TITLE : SA 8 BETULA GLANDULOSA/CAREX SPP/SPHAGNUM SPP

		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
PLOT NUMBER	MEAN	7499	8542	8626	7472	5759	8512	7483	7478	4576	5760	4586	4585	5761	4575	5757	7486
TOWNSHIP & RANGE		5913	61 9	63 8	6010	63 8	6210	60 8	5913	63 9	63 8	6310	6310	63 9	63 9	63 8	60 8
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L	83L
		4	6	6	3	6	6	3	4	6	6	6	6	6	6	6	3
PHYSIOGRAPHIC SUBREGION																	
GEOMORPHIC SYSTEM																	
ECOSECTION																	
ELEVATION(MASL)	1420.0	1485	1440	1580	1590	1400	1420	1340	1360	1340	1420	1400	1460	1410	1335	1400	1340
SLOPE(%)	2.1	1	2	2	0	0	2	0	1	0	5	0	0	10	4	2	4
ASPECT(DEG)		280	103	318			128		92		271			350	142	172	290
ENVIRONMENT/SOILS :																	
ECOLOGICAL MOISTURE REGIME		SHG	HG	SHG	SHD	SHG	SHG	SHD	SHD	SHD	SHD	HG	HG	HG	HG	HG	HG
NUTRIENT REGIME																	
OVERLYING MATERIAL		Q	Q	Q	Q		CM	M	Q	M	M	Q	Q			M	M
UNDERLYING MATERIAL																	
EROSION/DEPOSITION																	
SOIL SUBGROUP																	
SOIL GREAT GROUP																	
SOIL DRAINAGE		P	I	I	P	I	I	P	P	I	I	P	P	I	I	I	I
SOLUM THICKNESS(CM)	0.0																
TYPE & DEPTH TO RESTRICT(CM)																	
THICKNESS LFH(CM)	0.0																
pH-LFH	0.0																
-A	0.0																
-B	0.0																
-C	0.0																
TEXTURE-A/1																	
-B/2																	
-C/3																	
COARSE FRAGMENTS-B(%)	0.0																
SEEPAGE(*) & MOTTLING(CM)																	
ROOTING DEPTH(CM)	0.0																
VEGETATION :																	
ASSOCIATION																	
STAND AGE(YR)	84.0										84						
CANOPY HEIGHT(M)	17.0										17						
MEAN ANNUAL INCREMENT	0.0																
STRATA COVERAGE(%)-A	5.9	0	2	0	8	0	0	0	0	0	85	0	0	0	0	0	0
-B	43.6	25	80	20	45	40	60	20	18	20	45	45	25	85	50	70	50
-C	22.6	5	7	1	10	10	0	3	15	20	90	10	15	35	30	30	80
-G	23.4	25	15	15	55	30	10	25	70	25	0	10	15	15	25	30	10
-D	77.8	95	95	95	85	90	98	95	50	95	6	80	95	87	77	99	2
-L	1.2	0	0	0	0	0	0	0	0	0	4	0	0	3	3	1	8
SURFACE SUBST(%)-DEAD WOOD	0.9	0	2	3	1	0	0	1	0	0	2	1	0	2	1	1	1
-BEDROCK	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-MIN.SOIL	0.1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
-ORGANIC	96.9	99	97	97	94	90	98	95	99	98	98	97	95	97	99	99	99
-OPEN WATER	1.9	1	0	0	5	10	2	4	1	0	0	2	5	1	0	0	0
BIOMASS(KG/HA)-FORBS	0.0																
-GRAMINOIDS	0.0																
-BROWSE	0.0																

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	9	

DRY MEADOW-FLUVIAL

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 41 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 7474		20 8630		3G P220	
NUMBER OF SPECIES PER PLOT	19.7		19		24		16	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV
B2 LAYER								
1 SALI GLA	66.7	19.0	53	2	4	2		
2 SALI BAR	33.3	11.3	34	2				
3 SALI MYR	33.3	1.3			4	2		
C LAYER								
4 ACHI MIL	100.0	1.7	1	2	2	2	2	2
5 GEUM TRI	66.7	8.3			9	2	16	2
6 POLE PUL	66.7	3.7			5	2	6	2
7 EPIL ANG	66.7	1.3	2	2	2	2		
8 RUBU ARC	66.7	1.3			2	2	2	2
9 FRAG VIR	66.7	1.0	2	2	1	2		
10 GALI BOR	66.7	1.0	1	2	2	2		
11 VALE DIO	33.3	3.3			10	2		
12 ASTE HES	33.3	1.3	4	2				
13 LATH OCH	33.3	1.0	3	2				
14 SENE TRI	33.3	1.0					3	2
15 THAL VEN	33.3	1.0	3	2				
16 MERT PAN	33.3	0.7	2	2				
17 SENE PAU	33.3	0.7					2	2
18 STEL LOG	33.3	0.7			2	2		
19 ASTE SUB	33.3	0.3					1	2
20 DELP GLA	33.3	0.3	1	2				
21 PETA SAG	33.3	0.3					1	2
22 RUBU CHA	33.3	0.3	1	2				
23 RUME ALP	33.3	0.3			1	2		
24 SMIL STE	33.3	0.3	1	2				
25 STEL LON	33.3	0.3					1	2
26 TARA OFF	33.3	0.3	1	2				
27 VERO ALP	33.3	0.3			1	2		
28 VERO SER	33.3	0.3					1	2
G LAYER								
29 DESC CES	66.7	13.3			17	2	23	2
30 PHLE COM	66.7	1.3	1	2	3	2		
31 CALA CAN	66.7	1.0	1	2	2	2		
32 AGRO TRA	66.7	0.7	1	2	1	2		
33 CARE SPP	33.3	4.3					13	2
34 CARE AQU	33.3	1.3			4	2		
35 ELYM INN	33.3	0.7	2	2				
36 BROM INE	33.3	0.3	1	2				
37 LUZU PAR	33.3	0.3			1	2		
D LAYER								
38 AULA PAL	66.7	23.3			15	2	55	2
39 TOME NIT	66.7	7.0			3	2	18	2
40 PLAG MED	66.7	2.3			1	2	6	2
41 POLY JUN	33.3	0.7			2	2		
42 SPHA WAR	33.3	0.7					2	2
L LAYER								
43 PELT MAL	33.3	0.7			2	2		

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ENVIRONMENT/SOILS-VEGETATION TABLES

TITLE : SA 9 DRY MEADOW-FLUVIAL

TABLE 41

		20	20	3G
PLOT NUMBER	MEAN	7474	8630	P220
TOWNSHIP & RANGE		5912	6310	6411
MERIDIAN		W 6	W 6	W 6
MAPSHEET		83L	83L	83L
		4	6	12
PHYSIOGRAPHIC SUBREGION				
GEOMORPHIC SYSTEM				
ECOSECTION				
ELEVATION(MASL)	1425.0	1350	1500	1425
SLOPE(%)	1.0	0	2	1
ASPECT(DEG)				310
ENVIRONMENT/SOILS :				
ECOLOGICAL MOISTURE REGIME		SHG	SHG	HD
NUTRIENT REGIME				SM
OVERLYING MATERIAL		F	M	Ff
UNDERLYING MATERIAL				
EROSION/DEPOSITION				
SOIL SUBGROUP				CU
SOIL GREAT GROUP				F
SOIL DRAINAGE		I	MW	P
SOLUM THICKNESS(CM)	0.0			
TYPE & DEPTH TO RESTRICT(CM)				
THICKNESS LFH(CM)	0.0			
pH-LFH	0.0			
-A	0.0			
-B	0.0			
-C	0.0			
TEXTURE-A/1				
-B/2				
-C/3				
COARSE FRAGMENTS-B(%)	0.0			
SEEPAGE(*) & MOTTLING(CM)				
ROOTING DEPTH(CM)	0.0			
VEGETATION :				
ASSOCIATION				
STAND AGE(YR)	0.0			
CANOPY HEIGHT(M)	0.0			
MEAN ANNUAL INCREMENT	0.0			
STRATA COVERAGE(%)-A	0.0	0	0	
-B	26.0	75	3	0
-C	31.7	30	30	35
-G	26.7	5	40	35
-D	29.3	0	8	80
-L	0.7	0	2	0
SURFACE SUBST(%)-DEAD WOOD	0.7	0	1	1
-BEDROCK	0.0	0	0	0
-STONES	0.0	0	0	0
-MIN.SOIL	6.7	20	0	0
-ORGANIC	92.7	80	99	99
-OPEN WATER	0.0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0			
-GRAMINOIDS	0.0			
-BROWSE	0.0			

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	SA	10	

SUBALPINE GRASSLAND

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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TABLE 42 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 7495		20 7493	
NUMBER OF SPECIES PER PLOT	19.0		22		16	
SPECIES	%P	MC	%C	SV	%C	SV
B2 LAYER						
1 ROSA ACI	100.0	3.5	5	2	2	2
2 POPU BAL	50.0	5.0			10	2
3 SHEP CAN	50.0	2.5			5	2
C LAYER						
4 ARCT UVA	100.0	15.5	2	2	29	2
5 OXYT SPL	100.0	3.5	4	2	3	2
6 SAXI TRI	100.0	2.5	4	2	1	2
7 HEDY ALP	100.0	1.0	1	2	1	2
8 DRYA OCT	50.0	9.5	19	2		
9 ASTR STR	50.0	2.0	4	2		
10 ASTE SIB	50.0	1.0	2	2		
11 POTE HOO	50.0	1.0	2	2		
12 ACHI MIL	50.0	0.5			1	2
13 ANEM LIT	50.0	0.5	1	2		
14 ANEM PAR	50.0	0.5			1	2
15 ARTE NOR	50.0	0.5	1	2		
16 EPIL ANG	50.0	0.5	1	2		
17 GALI BOR	50.0	0.5			1	2
18 GENT CAL	50.0	0.5	1	2		
19 GENT PRP	50.0	0.5			1	2
20 HABE VIR	50.0	0.5			1	2
21 MINU BIF	50.0	0.5	1	2		
22 OXYT POD	50.0	0.5			1	2
23 SOLI NEM	50.0	0.5			1	2
24 SOLI SPA	50.0	0.5	1	2		
25 ZYGA ELE	50.0	0.5			1	2
G LAYER						
26 ELYM INN	100.0	3.5	5	2	2	2
27 DANT CAL	50.0	0.5	1	2		
D LAYER						
28 TORT RUR	50.0	1.5	3	2		
29 THAM SUB	50.0	1.0	2	2		
L LAYER						
30 CETR NIV	50.0	2.5	5	2		
31 PARM CHL	50.0	0.5	1	2		
32 STER TOM	50.0	0.5	1	2		

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : SA 10 SUBALPINE GRASSLAND TABLE 42

		20	20
PLOT NUMBER	MEAN	7495	7493
TOWNSHIP & RANGE		6010	60 8
MERIDIAN		W 5	W 6
MAPSHEET		83L 3	83L 3
PHYSIOGRAPHIC SUBREGION			
GEOMORPHIC SYSTEM			
ECOSECTION			
ELEVATION(MASL)	1755.0	1690	1820
SLOPE(%)	31.5	9	54
ASPECT(DEG)		210	250
ENVIRONMENT/SOILS :			
ECOLOGICAL MOISTURE REGIME		VX	X
NUTRIENT REGIME			
OVERLYING MATERIAL		R	R
UNDERLYING MATERIAL			
EROSION/DEPOSITION			
SOIL SUBGROUP			
SOIL GREAT GROUP			
SOIL DRAINAGE		R	W
SOLUM THICKNESS(CM)	0.0		
TYPE & DEPTH TO RESTRICT(CM)			
THICKNESS LFH(CM)	0.0		
pH-LFH	0.0		
-A	0.0		
-B	0.0		
-C	0.0		
TEXTURE-A/1			
-B/2			
-C/3			
COARSE FRAGMENTS-B(%)	0.0		
SEEPAGE(*) & MOTTLING(CM)			
ROOTING DEPTH(CM)	0.0		
VEGETATION :			
ASSOCIATION			
STAND AGE(YR)	0.0		
CANOPY HEIGHT(M)	0.0		
MEAN ANNUAL INCREMENT	0.0		
STRATA COVERAGE(%)-A	0.0	0	0
-B	10.0	5	15
-C	30.0	35	25
-G	4.0	5	3
-D	5.0	10	0
-L	3.5	7	0
SURFACE SUBST(%)-DEAD WOOD	0.0	0	0
-BEDROCK	17.5	20	15
-STONES	22.5	40	5
-MIN.SOIL	15.0	0	30
-ORGANIC	45.0	40	50
-OPEN WATER	0.0	0	0
BIOMASS(KG/HA)-FORBS	0.0		
-GRAMINOIDS	0.0		
-BROWSE	0.0		

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	A	1	

ALPINE

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V) TABLE 43 PAGE 1

PLOT NUMBER	AVERAGE VALUE		20 7480		20 8627		20 8633		20 8638		20 7481	
NUMBER OF SPECIES PER PLOT	26.2		30		20		21		31		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
B2 LAYER												
1 SALI GLA	60.0	4.0					10	2	5	2	5	2
2 SALI RET	20.0	14.0	70	2								
3 SALI BAA	20.0	6.0							30	2		
4 SALI ARC	20.0	1.0	5	2								
5 SALI BAR	20.0	1.0			5	2						
C LAYER												
6 ARTE NOR	100.0	7.4	8	2	3	2	1	2	23	2	2	2
7 POTE DIV	80.0	2.2	8	2	1	2	1	2	1	2		
8 POLY VIV	80.0	2.0	6	2	2	2	1	2	1	2		
9 MYOS ALP	80.0	1.0	1	2	1	2			1	2	2	2
10 ACON DEL	80.0	0.8	1	2	1	2			1	2	1	2
11 SIBB PRO	60.0	1.4	4	2	1	2			2	2		
12 THAL VEN	40.0	2.0							3	2	7	2
13 VALE DIO	40.0	2.0							4	2	6	2
14 VALE SIT	40.0	2.0							6	2	4	2
15 TROL ALB	40.0	1.4							3	2	4	2
16 EPIL LAT	40.0	0.8					1	2	3	2		
17 RUME ALP	40.0	0.8	1	2							3	2
18 GENT PRP	40.0	0.6	2	2							1	2
19 VERO ALP	40.0	0.6	1	2					2	2		
20 EQUI SCI	40.0	0.4			1	2			1	2		
21 ERIG PER	40.0	0.4			1	2					1	2
22 PEDI BRA	40.0	0.4			1	2			1	2		
23 DRYA OCT	20.0	4.2					21	2				
24 EQUI ARV	20.0	2.4									12	2
25 OXYR DIG	20.0	1.8									9	2
26 PETA SAG	20.0	1.4									7	2
27 SILE ACA	20.0	1.0	5	2								
28 SENE TRI	20.0	0.8									4	2
29 VACC CAE	20.0	0.8							4	2		
30 ARNI LAT	20.0	0.4									2	2
31 ERIG HUM	20.0	0.4	2	2								
32 HEDY ALP	20.0	0.4					2	2				
33 MINU OBT	20.0	0.4			2	2						
34 POTE HOO	20.0	0.4					2	2				
35 SAXI TRI	20.0	0.4					2	2				
36 SOLI MUL	20.0	0.4	2	2								
37 ACHI MIL	20.0	0.2							1	2		
38 CERA ARV	20.0	0.2									1	2
39 CERA BEE	20.0	0.2	1	2								
40 DELP GLA	20.0	0.2									1	2
41 GENT PRO	20.0	0.2					1	2				
42 GEOC LIV	20.0	0.2									1	2
43 MOEH LAT	20.0	0.2									1	2
44 OXYT DEF	20.0	0.2									1	2
45 OXYT POD	20.0	0.2					1	2				
46 PEDI CAP	20.0	0.2	1	2								

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	A	1	

ALPINE

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

PLOT NUMBER	AVERAGE VALUE		20 7480		20 8627		20 8633		20 8638		20 7481	
NUMBER OF SPECIES PER PLOT	26.2		30		20		21		31		29	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
47 RANU OCC	20.0	0.2									1	2
48 SOLI NEM	20.0	0.2					1	2				
G LAYER												
49 POA ALP	60.0	1.8	4	2					1	2	4	2
50 TRIS SPI	60.0	0.6	1	2					1	2	1	2
51 LUZU PAR	40.0	0.6							2	2	1	2
52 PHLE COM	40.0	0.6							1	2	2	2
53 CARE TOL	40.0	0.4							1	2	1	2
54 CARE MAC	20.0	1.0	5	2								
55 AGRO TRA	20.0	0.4									2	2
56 CALA STR	20.0	0.4					2	2				
57 DESC CES	20.0	0.4			2	2						
58 CARE ALB	20.0	0.2			1	2						
59 CARE CON	20.0	0.2							1	2		
60 CARE DIA	20.0	0.2			1	2						
61 CARE PEN	20.0	0.2	1	2								
62 LUZU PIP	20.0	0.2	1	2								
D LAYER												
63 POLY JUN	40.0	1.8					1	2	8	2		
64 BRAC ALB	40.0	1.0							1	2	4	2
65 DICR SPP	20.0	5.6			28	2						
66 AULA PAL	20.0	4.4							22	2		
67 HYLO SPL	20.0	4.4			22	2						
68 PLEU SCH	20.0	2.8			14	2						
69 DREP UNC	20.0	1.0	5	2								
70 THAM SUB	20.0	0.4					2	2				
71 BRAC GRO	20.0	0.2	1	2								
72 BRYU PSE	20.0	0.2			1	2						
73 CETR CUC	20.0	0.2					1	2				
74 DICR SCO	20.0	0.2					1	2				
75 NEPH EXP	20.0	0.2							1	2		
76 PLAG ARI	20.0	0.2	1	2								
77 TORT NOR	20.0	0.2	1	2								
78 TORT RUR	20.0	0.2					1	2				
L LAYER												
79 STER TOM	60.0	1.8	5	2	1	2	3	2				
80 PELT MAL	40.0	0.6	1	2					2	2		
81 PELT APH	40.0	0.4	1	2	1	2						
82 CERA PUR	20.0	3.8	19	2								
83 CETR NIV	20.0	0.2					1	2				
84 CLAD COR	20.0	0.2	1	2								
85 CLAD ECM	20.0	0.2							1	2		
86 CLAD MIT	20.0	0.2							1	2		
87 LECA RUB	20.0	0.2					1	2				

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ENVIRONMENT/SOILS-VEGETATION TABLES　　　　RESOURCE INVENTORY

TITLE : A 1 ALPINE　　　　TABLE 43

		20	20	20	20	20
PLOT NUMBER	MEAN	7480	8627	8633	8638	7481
TOWNSHIP & RANGE		5813	5913	5813	5813	5814
MERIDIAN		W 6	W 6	W 6	W 6	W 6
MAPSHEET		83L 4	83L 4	83L 4	83L 4	83L 4
PHYSIOGRAPHIC SUBREGION						
GEOMORPHIC SYSTEM						
ECOSECTION						
ELEVATION(MASL)	2052.0	2100	2130	2100	2060	1870
SLOPE(%)	16.2	22	14	22	14	9
ASPECT(DEG)		284	98	180	184	39
ENVIRONMENT/SOILS :						
ECOLOGICAL MOISTURE REGIME		X	X	X	M	X
NUTRIENT REGIME						
OVERLYING MATERIAL						
UNDERLYING MATERIAL						
EROSION/DEPOSITION						
SOIL SUBGROUP						
SOIL GREAT GROUP						
SOIL DRAINAGE		R	W	W	W	R
SOLUM THICKNESS(CM)	0.0					
TYPE & DEPTH TO RESTRICT(CM)						
THICKNESS LFH(CM)	0.0					
pH-LFH	0.0					
-A	0.0					
-B	0.0					
-C	0.0					
TEXTURE-A/1						
-B/2						
-C/3						
COARSE FRAGMENTS-B(%)	0.0					
SEEPAGE(*) & MOTTLING(CM)						
ROOTING DEPTH(CM)	0.0					
VEGETATION :						
ASSOCIATION						
STAND AGE(YR)	0.0					
CANOPY HEIGHT(M)	0.0					
MEAN ANNUAL INCREMENT	0.0					
STRATA COVERAGE(%)-A	0.0	0	0	0	0	0
-B	26.0	75	5	10	35	5
-C	39.0	15	10	40	50	80
-G	6.2	5	10	1	5	10
-D	26.6	30	60	15	25	3
-L	3.6	7	2	6	3	0
SURFACE SUBST(%)-DEAD WOOD	0.0	0	0	0	0	0
-BEDROCK	0.6	0	0	3	0	0
-STONES	3.8	2	1	5	1	10
-MIN.SOIL	5.0	0	0	25	0	0
-ORGANIC	90.2	96	99	67	99	90
-OPEN WATER	0.0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	0.0					
-GRAMINOIDS	0.0					
-BROWSE	0.0					

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MO	1	

PINUS CONTORTA-POPULUS TREMULOIDES/ARCTOSTAPHYLOS UVA-URSA

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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PLOT NUMBER	AVERAGE VALUE		3B F124		3B F125	
NUMBER OF SPECIES PER PLOT	43.5		55		32	
SPECIES	%P	MC	%C	SV	%C	SV
A1 LAYER						
1 PINU CON	100.0	6.0	10	2	2	2
2 POPU TRE	50.0	0.5	1	1		
B1 LAYER						
POPU TRE	100.0	20.0	10	1	30	1
PINU CON	100.0	6.0	10	2	2	2
3 PICE ENE	100.0	1.0	1	2	1	2
B2 LAYER						
POPU TRE	100.0	30.0	30	1	30	1
PICE ENE	100.0	1.5	2	2	1	2
PINU CON	100.0	1.0	1	2	1	2
4 SALI BAR	50.0	3.5			7	2
5 SALI SCO	50.0	1.5	3	2		
6 ABIE LAS	50.0	1.0	2	2		
7 RHOD ALB	50.0	1.0	2	2		
8 SALI GLA	50.0	1.0	2	2		
9 VACC MEM	50.0	1.0	2	2		
10 BETU GLA	50.0	0.5	1	2		
11 LEDU GRO	50.0	0.5	1	2		
12 MENZ FER	50.0	0.5	1	2		
13 POPU BAL	50.0	0.5			1	2
C LAYER						
14 ARCT UVA	100.0	40.0	15	2	65	2
15 ARTE NOR	100.0	5.5	1	2	10	2
16 CORN CAN	100.0	4.5	5	2	4	2
17 SOLI MUL	100.0	4.0	6	2	2	2
18 EPIL ANG	100.0	2.5	1	2	4	2
19 ANTE ROS	100.0	2.0	2	2	2	2
20 CAST MIN	100.0	2.0	2	2	2	2
21 ERIG PER	100.0	2.0	3	2	1	2
22 CAMP ROT	100.0	1.5	1	2	2	2
23 CAST OCC	100.0	1.5	1	2	2	2
24 ACHI MIL	100.0	1.0	1	2	1	2
25 ANTE RAC	100.0	1.0	1	2	1	2
26 FRAG VIR	100.0	1.0	1	2	1	2
27 GENT AMA	100.0	1.0	1	2	1	2
28 LINN BOR	50.0	7.5	15	2		
29 LYCO COM	50.0	2.0	4	2		
30 ARNI COR	50.0	0.5			1	2
31 ARNI LAT	50.0	0.5	1	2		
32 HABE HYP	50.0	0.5	1	2		
33 LYCO CLA	50.0	0.5	1	2		
34 SENE TRI	50.0	0.5	1	2		
35 VACC CAE	50.0	0.5	1	2		
36 VACC VIT	50.0	0.5	1	2		
G LAYER						
37 ELYM INN	100.0	6.0	2	2	10	2
38 TRIS SPI	100.0	2.0	3	2	1	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MO	1	

PINUS CONTORTA-POPULUS TREMULOIDES/ARCTOSTAPHYLOS UVA-URSA

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
EDMONTON, ALBERTA
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PLOT NUMBER	AVERAGE VALUE		3B F124		3B F125	
NUMBER OF SPECIES PER PLOT	43.5		55		32	
SPECIES	%P	MC	%C	SV	%C	SV
39 CALA CAN	50.0	0.5			1	2
40 FEST SAX	50.0	0.5			1	2
D LAYER						
41 POLY PIL	50.0	3.5	7	2		
42 EURH PUL	50.0	1.5	3	2		
43 BRAC GRO	50.0	1.0	2	2		
44 THUI ABI	50.0	1.0			2	2
45 POLY JUN	50.0	0.5	1	2		
L LAYER						
46 PELT MAL	100.0	6.0	10	2	2	2
47 CLAD GRA	50.0	2.0	4	2		
48 CETR HAL	50.0	1.5	3	2		
49 CLAD COC	50.0	1.5	3	2		
50 CLAD CHL	50.0	1.0			2	2
51 CLAD COR	50.0	1.0	2	2		
52 CLAD DEF	50.0	1.0	2	2		
53 CLAD MIT	50.0	1.0	2	2		
54 PELT CAN	50.0	1.0	2	2		
55 STER TOM	50.0	1.0	2	2		
56 CLAD GON	50.0	0.5	1	2		
57 CLAD PYX	50.0	0.5			1	2
58 PELT APH	50.0	0.5	1	2		

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MO 1 PINUS CONTORTA-POPULUS TREMULOIDES/ARCTOSTAPHYLOS UVA-URSA TABLE 44

		3B	3B
PLOT NUMCER	MEAN	F124	F125
TOWNSHIP & RANGE		58 7	58 7
MERIDIAN		W 6	W 6
MAPSHEET		83E	83E
		15	15
PHYSIOGRAPHIC SUBREGION			
GEOMORPHIC SYSTEM			
ECOSECTION			
ELEVATION(MASL)	1535.0	1540	1530
SLOPE(%)	34.0	22	46
ASPECT(DEG)		160	216
ENVIRONMENT/SOILS :			
ECOLOGICAL MOISTURE REGIME		SX	SX
NUTRIENT REGIME		M	M
OVERLYING MATERIAL		Cv	Mv
UNDERLYING MATERIAL		Mv	P
EROSION/DEPOSITION			
SOIL SUBGROUP		E	E
SOIL GREAT GROUP		DYB	DYB
SOIL DRAINAGE		W	W
SOLUM THICKNESS(CM)	62.0	64	60
TYPE & DEPTH TO RESTRICT(CM)		B 64	B 70
THICKNESS LFH(CM)	4.5	1	8
pH-LFH	0.0		
-A	4.0	4.0	4.0
-B	4.5	4.5	4.5
-C	4.8	4.5	5.0
TEXTURE-A/1		LS	SIL
-B/2		S	SIL
-C/3		LS	LS
COARSE FRAGMENTS-B(%)	12.5	0	25
SEEPAGE(*) & MOTTLING(CM)			
ROOTING DEPTH(CM)	48.5	52	45
VEGETATION :			
ASSOCIATION		MO 1	MO 1
STAND AGE(YR)	31.0	30	32
CANOPY HEIGHT(M)	5.0	5	5
MEAN ANNUAL INCREMENT	0.5	0.5	
STRATA COVERAGE(%)-A	6.5	11	2
-B	57.5	55	60
-C	62.5	45	80
-G	3.5	5	2
-D	23.5	45	2
-L	17.5	30	5
SURFACE SUBST(%)-DEAD WOOD	3.5	5	2
-BEDROCK	1.0	2	0
-STONES	2.5	5	0
-MIN.SOIL	7.5	15	0
-ORGANIC	85.5	73	98
-OPEN WATER	0.0	0	0
BIOMASS(KG/HA)-FORBS	163.0	128	198
-GRAMINOIDS	31.5	2	61
-BROWSE	41.0		41

LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MO	2	

POPULUS TREMULOIDES/ROSA ACICULARIS/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE		GC		GC		3B		3B		3B		3B		3B	
PLOT NUMBER	VALUE		3916		3924		F009		F011		F018		F112		F140	
NUMBER OF SPECIES PER PLOT	29.1		23		31		26		40		26		27		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
A1 LAYER																
1 POPU TRE	100.0	51.3	88	3	18	3	70	2	50	2	35	3	48	2	50	2
2 POPU BAL	14.3	6.0			42	3										
3 PICE GLA	14.3	0.4													3	2
A2 LAYER																
POPU TRE	100.0	8.6	18	3	29	3	2	2	2	2	.2	1	2	2	5	2
POPU BAL	28.6	1.9			8	3									5	1
PICE GLA	14.3	0.3													2	2
E LAYER																
4 BRYO FUS	14.3	0.7							5	2						
5 USNE SOR	14.3	0.7							5	2						
B1 LAYER																
PICE GLA	42.9	1.1					3	2	2	2					3	2
6 SALI GLA	28.6	1.5	.2	3					10	2						
POPU TRE	28.6	0.4							2	2	1	2				
7 AMEL ALN	14.3	0.4											3	2		
POPU BAL	14.3	0.3													2	2
8 SALI BEB	14.3	0.3											2	2		
9 SHEP CAN	14.3	0.3	2	2												
B2 LAYER																
10 ROSA ACI	85.7	8.7	10	4	10	3			4	2	10	2	20	3	7	2
POPU TRE	57.1	1.1	.2	3	.2	3			5	2	2	2				
AMEL ALN	42.9	1.4	.7	3					2	2			7	2		
PICE GLA	42.9	1.1					2	2	2	2					4	2
SHEP CAN	42.9	1.0					2	2	2	2					3	2
11 LONI INV	14.3	2.1					15	2								
12 SALI ARC	14.3	2.1					15	2								
SALI GLA	14.3	1.4							10	2						
13 SALI SPP	14.3	1.0									7	2				
14 LONI DIO	14.3	0.7											5	2		
15 RIBE INE	14.3	0.3					2	2								
16 RIBE TRI	14.3	0.3					2	2								
SALI BEB	14.3	0.3											2	2		
17 LEDU GRO	14.3	0.1							1	2						
18 PICE MAR	14.3	0.1											1	2		
19 VACC MYR	14.3	0.1													1	2
20 VIBU EDU	14.3	0.1			.9	3										
21 SPIR BET	14.3	0.0	.2	4												
C LAYER																
22 EPIL ANG	100.0	9.8	.7	3	7	3	5	2	2	2	25	2	25	3	10	2
23 FRAG VIR	100.0	3.3	.7	3	2	3	10	2	2	2	3	2	6	2	1	2
24 LATH OCH	85.7	2.8	.7	4	7	3			7	2	5	2	4	2	2	2
25 VICI AME	85.7	1.6	.2	4	2	3			3	2	5	2	2	2	1	2
26 ASTE CIL	85.7	1.5	.7	3	7	3	2	2	2	2			3	2	2	2
27 ASTE CON	71.4	4.4	8	4	8	3	3	2					2	2	10	2
28 THAL VEN	71.4	3.2	7	3					3	2	4	2	5	2	10	2
29 DELP GLA	71.4	2.7			4	3	5	2	4	2	5	2	1	2		
30 PYRO ASA	71.4	1.5	.2	2	2	3	1	2	5	2					2	2

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MO	2	

POPULUS TREMULOIDES/ROSA ACICULARIS/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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TABLE 45 PAGE 2

PLOT NUMBER	AVERAGE VALUE		GC 3916		GC 3924		3B F009		3B F011		3B F018		3B F112		3B F140	
NUMBER OF SPECIES PER PLOT	29.1		23		31		26		40		26		27		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
31 GALI BOR	71.4	0.9	.2	3	.2	3			2	2	2	2			2	2
32 GERA RIC	57.1	3.0			.7	3					10	2	7	2	3	2
33 SMIL STE	57.1	1.5	.2	2	.2	3					5	2	5	2		
34 MERT PAN	42.9	4.6			8	3			12	2	12	3				
35 HERA LAN	42.9	3.6			8	3					15	3	2	2		
36 ACHI MIL	42.9	0.9							1	1	3	2	2	2		
37 PETA PAL	42.9	0.9					3	2			2	2			1	2
38 VACC CAE	28.6	1.3							7	2					2	2
39 CORN CAN	28.6	1.1							5	2					3	2
40 LINN BOR	28.6	1.1							5	2					3	2
41 HEDY ALP	28.6	1.0											2	2	5	2
42 ACTA RUB	28.6	0.4			.7	3					2	2				
43 MITE NUD	28.6	0.3			.2	3	2	2								
44 VIOL CAN	28.6	0.3			.2	3					2	2				
45 THAL OCC	14.3	1.1			8	3										
46 RUBU PAA	14.3	1.0					7	2								
47 RUBU PUB	14.3	0.7											5	2		
48 ASTE SPP	14.3	0.6									4	2				
49 LATH VEN	14.3	0.4					3	2								
50 DISP TRA	14.3	0.3	2	4												
51 STEL LON	14.3	0.3									2	2				
52 VALE DIO	14.3	0.3					2	2								
53 CAMP ROT	14.3	0.1											1	2		
54 CAST MIN	14.3	0.1							1	2						
55 CERA ARV	14.3	0.1							1	2						
56 DRAB AUR	14.3	0.1							1	2						
57 EQUI ARV	14.3	0.1			.7	3										
58 GENT AMA	14.3	0.1							1	2						
59 MAIA CAN	14.3	0.1													1	2
60 RUBU ARC	14.3	0.1			.7	3										
61 TARA OFF	14.3	0.1							1	2						
62 VIOL ADU	14.3	0.1							1	2						
63 VIOL SPP	14.3	0.1	.7	3												
64 CLEM OCC	14.3	0.0	.2	3												
G LAYER																
65 ELYM INN	71.4	10.0					15	2	10	2	5	2	10	2	30	2
66 CALA CAN	14.3	2.6			18	3										
67 CALA INE	14.3	1.4									10	2				
68 CALA STR	14.3	0.7							5	2						
D LAYER																
69 EURH PUL	42.9	2.0					3	2					1	2	10	2
70 BRAC SAL	42.9	1.5	.2	3					5	2			5	2		
71 PLEU SCH	28.6	0.7					3	2							2	2
72 PTIL CRI	28.6	0.3					1	2	1	2						
73 HYLO SPL	14.3	0.3													2	2
74 DREP UNC	14.3	0.1					1	2								
75 PLAG ELI	14.3	0.1							1	2						
76 PLAG MED	14.3	0.1					1	2								

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LEVEL	ZONE	ASSC	TYPE
ECOSYM UNIT	MO	2	

POPULUS TREMULOIDES/ROSA ACICULARIS/ELYMUS INNOVATUS

PRESENCE (%P), MEAN COVER (MC), PERCENT COVER (%C), SOCIABILITY (S), VIGOR (V)

RESOURCE INVENTORY
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	AVERAGE		GC		GC		3B		3B		3B		3B		3B	
PLOT NUMBER	VALUE		3916		3924		F009		F011		F018		F112		F140	
NUMBER OF SPECIES PER PLOT	29.1		23		31		26		40		26		27		31	
SPECIES	%P	MC	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV	%C	SV
77 POHL NUT	14.3	0.1									1	2				
78 POLY JUN	14.3	0.1							1	2						
79 AMBL SER	14.3	0.0			.2	3										
80 BRAC SPP	14.3	0.0			.2	3										
81 CAMP HIS	14.3	0.0			.2	3										
82 PYLA POL	14.3	0.0	.2	3												
83 TORT RUR	14.3	0.0			.2	3										

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ENVIRONMENT/SOILS-VEGETATION TABLES RESOURCE INVENTORY

TITLE : MO 2 POPULUS TREMULOIDES/ROSA ACICULARIS/ELYMUS INNOVATUS TABLE 45

PLOT NUMBER	MEAN	GC 3916	GC 3924	3B F009	3B F011	3B F018	3B F112	3B F140
TOWNSHIP & RANGE		57 8	57 9	57 6	57 7	57 6	57 7	57 6
MERIDIAN		W 6	W 6	W 6	W 6	W 6	W 6	W 6
MAPSHEET		83E 14	83E 14	83E 15	63E 15	83E 15	83E 15	83E 15
PHYSIOGRAPHIC SUBREGION								
GEOMORPHIC SYSTEM								
ECOSECTION								
ELEVATION(MASL)	1164.3	1060	1310	1150	1130	1190	1100	1210
SLOPE(%)	21.6	30	12	3	4	20	54	28
ASPECT(DEG)		120	164	354	360	182	236	200
ENVIRONMENT/SOILS :								
ECOLOGICAL MOISTURE REGIME		SM	M	SM	SM	M	M	SM
NUTRIENT REGIME		SM	M	E	M	PM	E	E
OVERLYING MATERIAL		M	M	GF tv	Ft	Mv	Mv	C
UNDERLYING MATERIAL				P		R	P	P
EROSION/DEPOSITION								
SOIL SUBGROUP		O	O	O	O	BR	O	BR
SOIL GREAT GROUP		EB	EB	MB	DYB	GL	GL	GL
SOIL DRAINAGE		W	MW	W	W	MW	MW	W
SOLUM THICKNESS(CM)	43.7	54	42	45	22	52	45	46
TYPE & DEPTH TO RESTRICT(CM)				B 26		B 52		W 46
THICKNESS LFH(CM)	6.9	5	15	2	3	8	6	9
pH-LFH	6.1	6.3	5.9					
-A	6.5			8.0		7.0	4.5	6.5
-B	6.4	5.9	6.1	8.0	4.5	6.5	7.0	7.0
-C	7.1	7.4	6.5	8.0	5.5			8.0
TEXTURE-A/1			SIL			SL	L	SL
-B/2		L	CL	LS	SL	SL	CL	LS
-C/3		CL	CL	LS	SL			S
COARSE FRAGMENTS-B(%)	20.0		10	70	5	15	20	0
SEEPAGE(*) & MOTTLING(CM)								*
ROOTING DEPTH(CM)	45.3	103	42	40	18	45	25	44
VEGETATION :								
ASSOCIATION		MO 2	MO 2	MO 2	MO 2	MO 2	MO 2	MO 2
STAND AGE(YR)	66.0	64	68					
CANOPY HEIGHT(M)	17.0	12	12	22	17	18	18	20
MEAN ANNUAL INCREMENT	2.8	2.2	3.5					
STRATA COVERAGE(%)-A	64.3	90	90	70	50	35	50	65
-B	22.1	8	20	40	20	17	35	15
-C	48.1	17	40	40	55	80	60	45
-G	20.4	43	15	15	15	15	10	30
-D	4.7	1	1	5	5	1	5	15
-L	0.0	0	0	0	0	0	0	0
SURFACE SUBST(%)-DEAD WOOD	2.1	1	1	5	5	0	1	2
-BEDROCK	0.0	0	0	0	0	0	0	0
-STONES	0.0	0	0	0	0	0	0	0
-MIN.SOIL	0.0	0	0	0	0	0	0	0
-ORGANIC	97.9	98	99	95	95	100	99	98
-OPEN WATER	0.0	0	0	0	0	0	0	0
BIOMASS(KG/HA)-FORBS	570.7			319	931			462
-GRAMINOIDS	284.3			264	351			238
-BROWSE	10.0			7	13			

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RESOURCE INVENTORY

EDMONTON, ALBERTA

ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ABIE BAL							I 0.4			I 0.2	
ABIE LAS	I 0.0	I 0.2						IV 1.0	II 0.3	II 0.4	
ACHI MIL	I 0.1		I 0.1								III 0.5
ACON DEL											
ACTA RUB	I 0.0		I 0.2	II 0.3	I 0.2						
AGRO SCA											
AGRO TRA											
ALEC SAR											
ALNU CRI	I 0.9	II 0.5	II 1.7		III 10.0		I 0.1	IV 2.0	I 0.1	I 0.2	
ALNU TEN	I 0.4	I 0.8	III 2.8				I 0.1		I 0.3	II 2.6	
AMBL SER											
AMEL ALN	III 0.9	IV 1.2	II 0.8	V 13.3	II 0.6	III 0.8	I 0.1	II 4.7			
ANAS HEL											
ANDR POL											
ANEM LIT											
ANEM PAR											I 0.2
ANTE MED											
ANTE MIC											
ANTE NEG									I 0.4		
ANTE RAC											
ANTE ROS											
ARAL NUD	III 6.3	V 2.2	IV 6.8	V 17.0	V 13.2		I 0.1	V 14.3		I 3.8	
ARCT RUB											
ARCT UVA	I 0.3	I 3.0				IV 7.0	III 0.4				
ARNI CHA											
ARNI COR	II 0.4		I 0.2		III 1.2		I 0.1	II 0.7	I 0.1		
ARNI LAT											
ARNI RYD											
ARTE NOR											
ASTE CIL	II 0.4		II 0.3							II 0.6	
ASTE CON	IV 3.5	V 2.3	III 1.4	III 1.3	V 3.6		II 0.9	IV 2.3		I 0.6	
ASTE HES											
ASTE LAE											
ASTE PUN											
ASTE SIB											
ASTE SPP	I 0.1			II 0.3							
ASTE SUB			I 0.1								
ASTR AME			I 0.1								
ASTR STR											
ATHY FIL											
AULA PAL	I 0.1								I 0.1		III 1.0
BARB HAT											
BARB LYC							I 0.1		I 0.1		
BAZZ TRI											
BETU GLA									I 0.4		I 0.2
BETU OCC	I 0.1							II 0.7			I 0.2
BETU PAP	I 0.3	I 1.7	II 0.6	III 1.5	I 2.0		I 0.1	IV 1.3	I 0.1	II 2.0	
BETU PUM											I 0.2
BETU SPP											
BOTR VIR											

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SUMMARY VEGETATION TABLE

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EDMONTON, ALBERTA

ECOSYSTEMATIC UNITS / SPECIES	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
BRAC ALB											
BRAC CAM			I 0.1								
BRAC GRO											
BRAC HYL											
BRAC LEI											
BRAC MIL											
BRAC SAL	II 0.4	III 0.5	I 0.1		II 0.6						
BRAC SPP	I 0.0		I 0.1								
BRAC STA	I 0.3		I 0.1				II 0.3			I 0.2	
BROM INE											
BRYO CAP											
BRYO FRE											
BRYO FUR											
BRYO FUS						I 0.1					
BRYO SPP											
BRYU PSE	I 0.0										
CALA CAN	II 0.3							II 0.3			
CALA INE				II 0.3							
CALA SPP			I 0.2		I 0.2						
CALA STR	III 1.9	III 0.7	IV 1.1	III 0.5	IV 1.6	I 0.2	I 0.1		II 0.3	II 0.8	
CALL GIG											
CAMP HIS											
CAMP LAS											
CAMP ROT											
CAMP STE											
CARE ALB											
CARE AQU											
CARE BRU											
CARE CAP	I 0.0								I 0.3		
CARE CHO											
CARE COC											
CARE CON											
CARE DIA											
CARE DIS									I 0.1		I 0.2
CARE GYN											
CARE MAC											
CARE MIC											
CARE NIG											
CARE PAP											
CARE PAU						I 0.2					I 0.2
CARE PEN											
CARE PRA											
CARE ROS											
CARE ROT											
CARE SCI											
CARE SIC											
CARE SPP	I 0.1										II 6.3
CARE TEN											I 0.3
CARE TOL											
CARE VAG											III 1.0

ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
CASS TET											
CAST MIN	I 0.1	I 0.7	I 0.1						I 0.1		
CAST OCC											
CATO NIG											
CERA ARV											
CERA BEE											
CERA PUR											
CERA SPP											
CETR ARE											
CETR CHL											
CETR CUC											
CETR ERI											
CETR HAL						I 0.1					
CETR ISL											
CETR MER											
CETR NIV						I 0.1					
CETR PIN						I 0.1					
CLAD CAP											
CLAD CAR											
CLAD CEN						I 0.1					
CLAD CHL											
CLAD COC						I 0.2					
CLAD COI											
CLAD CON						I 0.1					
CLAD COR											I 0.2
CLAD CRI						III 0.5			I 0.1		
CLAD DEF											
CLAD ECM											I 0.2
CLAD FIM											
CLAD FUS	I 0.0										
CLAD GON											
CLAD GRA	I 0.0	I 0.2				II 0.5	I 0.1	II 0.3	I 0.3		
CLAD MIT		I 0.2				V 13.9	IV 1.0		II 2.9		II 0.5
CLAD PHY											
CLAD PLE											
CLAD PYX											
CLAD RAN						II 0.3	I 0.1				
CLAD SPP											
CLAD SQU											
CLAD STE						I 0.1					
CLAD UNC											
CLEM OCC											
CLIM DEN											
CORA TRI											
CORN CAN	V 7.3	V 6.8	IV 4.7	V 5.0	IV 3.2	III 3.2	V 3.9	V 6.3	V 4.7	IV 4.0	IV 2.3
CORN STO	II 1.3	I 0.2	IV 10.9	III 4.8	I 0.6					I 0.4	
CORY COR	I 0.7			V 18.8							
CYPR PAS	I 0.1										
DACT ARC											
DANT CAL											

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
DELP GLA											
DESC CES											
DICR ACU											
DICR BRE						I 0.2		II 0.3		I 0.2	
DICR FLA											
DICR FRA								II 0.7			
DICR FUS						I 0.2					
DICR POL						I 0.2	III 1.3		III 1.0		II 0.7
DICR SCO	I 0.0					I 0.2			I 0.1		
DICR SPP											
DICR UND	I 0.1									I 0.2	I 0.2
DISP TRA	I 0.1		I 0.1	II 0.5	II 0.6			II 0.3			
DRAB AUR											
DREP REV											
DREP UNC	I 0.1		I 0.2	II 0.3							
DRYA OCT											
DRYO CAR											
ELYM INN	III 2.1	V 4.7	II 0.8	IV 1.0		IV 1.8	V 1.6		III 0.6	I 0.2	
EMPE NIG											
EPIL ANG	IV 4.1	V 7.8	III 3.3	II 0.3	V 8.8		II 0.6	II 0.3	II 0.4	I 0.8	
EPIL CIL											
EPIL LAT											
EPIL PAL											
EQUI ARV	I 0.1		II 0.3			II 0.3					I 1.8
EQUI HYE											
EQUI PRA	II 0.3	II 0.3	II 0.5	III 1.0			I 0.1		I 0.1	II 1.6	III 1.7
EQUI SCI	I 0.1		I 0.1						I 0.1		V 1.0
EQUI SYL	III 0.4	II 0.3	II 0.3		II 0.4				I 0.1	II 0.4	II 0.5
ERIG HUM											
ERIG PER											
ERIG SPP											
ERIO VAG											
ERIO VIR											
EURH PUL	I 0.1		I 0.3								
EVER MES											
FEST SAX											
FRAG VIR	V 1.4	IV 0.7	III 0.9		II 0.4				I 0.1	II 0.4	
GALI BOR	V 0.9	IV 0.7	IV 0.8	V 1.0	III 0.6	II 0.3				II 0.4	II 0.3
GALI LAB											
GALI TRI	I 0.1		III 0.7		I 0.2			V 1.0		I 0.2	
GAUL HIS									II 0.4	I 0.2	
GENT AMA											
GENT CAL											
GENT GLA											
GENT PRO											
GENT PRP											
GEOC LIV							III 0.6				
GEOL LIV						I 0.2					

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
GERA RIC											
GERA VIS											
GEUM ALE											
GEUM RIV											
GEUM SPP											
GEUM TRI											I 0.2
GLYC STR											
GOOD OBL	I 0.0					I 0.2					
GYMN DRY	I 0.0		I 0.3		I 1.0			II 0.7		I 0.2	
HABA ORB											
HABE HYP											
HABE OBT											
HABE VIR											
HALE DEF											
HEDY ALP											
HEDY SUL											
HELO BLA											
HERA LAN											
HIER ODO	I 0.1				I 0.2						
HIER TRI											
HIER UMB	I 0.1								I 0.1		
HYLO SPL	III 2.3	I 0.2	I 0.2		I 0.2	II 0.3	V 7.1	V 5.0	V 22.3	V 11.2	V 33.3
HYPN PRA											
HYPO AUS											
HYPO BIT											
HYPO ENT											
HYPO PHY						I 0.1					
HYPO TUB											
ICMA ERI											
JAME AUT											
JUNC BAL											
JUNC DRU											
JUNI COM											
KALM POL											
KOBR MYO											
LARI LAR						II 0.3	I 0.1		I 0.1		II 1.3
LATH OCH	V 2.0	V 2.5	III 1.4	IV 1.3	V 1.4	II 0.7	I 0.1	IV 0.7		II 0.4	
LATH VEN											
LECA RUB											
LEDU GRO	I 0.3						IV 13.4		V 7.9		V 20.7
LEPI REP											
LEPT PYR											
LETH VUL											
LILI PHI		I 0.2									
LINN BOR	IV 1.6	V 3.7	III 1.6	V 3.3	III 1.2	IV 4.0	V 2.9	V 3.0	V 1.1	V 4.8	V 1.3
LIST BOR											

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
LIST COR											
LOBA LIN											
LOBA PUL											
LONI DIO			I 0.1	II 0.5							
LONI INV	IV 3.4	II 2.3	V 14.4	II 0.5	II 3.2		I 0.1	II 1.0	IV 0.9	V 4.8	IV 2.7
LOPH BIN											
LOPH LON											
LOPH POR											
LOPH VEN											
LUPI SER											
LUZU PAR											
LUZU PIP											
LYCO ANN							I 0.1	IV 1.3	I 0 1	I 0.2	
LYCO CLA									I 0.3		
LYCO COM	I 0.0					I 0.2	I 0.1				
MAIA CAN	IV 1.0	V 1.5	III 0.8	V 2.0	IV 1.4	V 1.8	III 1.4	V 1.3		II 0.4	I 0.2
MELA LIN						II 0.7	I 0.1		I 0.1		
MELA UNE		I 0.2									
MENY TRI											
MENZ FER											
MERT PAN	III 1.4	II 0.3	IV 2.9	IV 1.3	IV 1.6				I 0.1	II 0.6	II 0.8
MINU BIF											
MINU OBT											
MITE NUD	II 0.3		III 0.7	III 0.5	II 0.8			II 0.3	II 0.4	V 1.2	IV 1.0
MNIU AFF											
MNIU ARI											
MNIU SPI			I 0.1								
MOEH LAT	I 0.0		I 0.1								
MONE UNI											
MYLI ANO											
MYOS ALP											
NEPH BEL											
NEPH EXP											
NEPH PAR											
OPLO HOR											
ORTH SEC	III 0.4	V 0.8	II 0.3		I 0.4	I 0.2	II 0.3	II 0.3		I 0.2	II 0.3
ORYZ ASP				II 0.3	I 0.2						
ORYZ EXI									I 0.1		
ORYZ SPE	I 0.0										
OSMO CHI											
OSMO DEP	I 0.1		II 0.5								
OSMO PUR											
OXYC MIC							I 0.4		I 0.1		II 0.3
OXYR DIG											
OXYT DEF											
OXYT POD											
OXYT SPL											

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
PALU SQU											
PARM ALE											
PARM AMB						I 0.1					
PARM CHL											
PARM HYP											
PARM SUL											
PARN FIM											
PARN PAL											
PEDI BRA											
PEDI CAP											
PEDI LAB											
PEDI PAR											
PEDI SPP											
PELT APH	I 0.1		I 0.3			II 0.3	V 2.0		III 1.3	II 1.2	III 0.8
PELT CAN	I 0.0		II 0.3			I 0.3				I 0.4	I 0.3
PELT MAL	I 0.1					III 0.4	I 0.1		I 0.1		
PELT POL											
PENS PRO											
PETA PAL	IV 1.3	I 0.2	III 0.8	IV 0.8	III 0.6		II 0.4	II 0.3	II 0.4	III 0.6	IV 0.8
PETA SAG											
PHLE COM											
PHYL EMP											
PHYS ADS											
PICE ENE											
PICE ENG											
PICE GLA	III 1.3	IV 1.0	II 0.5	IV 2.8	I 1.0	II 1.7	II 0.4	V 1.7		V 29.0	II 1.0
PICE MAR	I 0.0		I 0.1				III 5.7		V 23.6	I 2.0	V 25.0
PINU BAN						I 2.5					
PINU CON	I 0.6	II 2.5	I 0.1			V 24.2	V 30.0	V 35.0	V 9.6		I 0.8
PLAD MED	I 0.0										
PLAG ARI											
PLAG CUS											
PLAG DRU			II 0.3								
PLAG ELL	I 0.1										II 2.8
PLAG LAE											
PLAG MED	I 0.1										
PLAT GLA											
PLEU SCH	II 1.3		I 0.5			V 4.1	V 62.4	V 7.0	V 50.0	V 20.0	V 24.2
POA ALP											
POA COM											
POA PAL											
POA PRA											
POHL NUT											
POLE PUL											
POLE SPP											
POLY COM											
POLY JUN	I 0.1	I 0.2				II 0.3	I 0.1				
POLY PIL											
POLY STR	I 0.0										I 0.2
POLY VIV											
POPU BAL	III 3.9	I 0.2	V 23.0	III 2.5	III 11.0		II 0.3			I 0.4	

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
POPU TRE	V 44.4	V 37.5	V 23.8	V 40.0	V 26.0	IV 1.2	III 0.6	IV 2.3	I 0.1	IV 2.8	
POTE DIV											
POTE GRA											
POTE HOO											
POTE PAL											
PRUN PEN				II 0.8							
PRUN VIR	I 0.2			IV 2.0							
PTIL CIL											
PTIL CRI	I 0.1	I 0.2	I 0.3		I 0.2	III 0.4	IV 6.3	V 4.3	V 12.1	V 18.0	IV 10.0
PTIL PUL											
PYLA POL											
PYRO ASA	IV 1.3	V 2.3	III 1.3	III 0.8	III 0.8	I 0.2	I 0.1	V 1.3	I 0.1	I 0.6	
PYRO CHL						II 0.3					
PYRO MIN	I 0.1										
RAMA FAS											
RAMA THR											
RANU OCC											
RHIZ GRA											
RHIZ PSE	I 0.0										
RHOD ALB											
RHYT TRI											
RIBE AME											
RIBE HIR											
RIBE INE											
RIBE LAC	I 0.1				I 0.2			II 0.3		I 0.2	
RIBE OXY	I 0.2		II 0.8	III 0.5							I 0.2
RIBE SPP	I 0.0			II 0.3							
RIBE TRI	I 0.0		I 0.2						I 0.1	I 0.2	
ROSA ACI	V 12.7	V 7.2	V 9.3	V 14.5	V 9.2	V 2.7	V 3.1	V 4.0	V 1.4	IV 3.8	IV 1.2
RUBU ACU											I 0.2
RUBU ARC											
RUBU CHA										I 0.2	I 0.2
RUBU IDA	II 0.9	I 0.2	III 2.4	III 1.8	I 0.4			IV 1.0		I 0.2	
RUBU PAA											
RUBU PAR					V 22.6						
RUBU PED	I 0.2										
RUBU PUB	V 2.0	III 1.0	V 1.9	V 3.5	IV 1.8			IV 0.7	I 0.3	IV 3.6	II 0.5
RUBU STR				II 0.5							
RUME ALP											
SALI ARC											
SALI ATH											
SALI BAA											
SALI BAR											
SALI BEB	I 0.6		I 0.3	II 0.3	I 0.6		III 0.4				
SALI CAN											
SALI DIS	I 0.0			II 0.3							
SALI DRU	I 0.0										
SALI FAR											
SALI GLA	I 0.2	I 0.2				I 0.2		II 0.7	I 0.1		

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
SALI LUC			I 0.1								
SALI MEL											
SALI MYR											II 0.3
SALI OCC									I 0.3		
SALI PED											
SALI PLA											II 1.0
SALI PYR											
SALI RET											
SALI SCO	I 0.1	I 0.2		II 0.3		I 0.3		II 0.3			
SALI SPP	I 0.4	I 0.8	I 0.1	II 0.3	II 0.6		II 0.3	II 0.3	I 0.1		I 0.3
SALI STO											
SAMB RAC											
SAXI TRI											
SCHI PUR	I 0.0										
SCIR CAE											
SELA SEL											
SENE IND											
SENE PAU											
SENE TRI											
SHEP ARG	I 0.0										
SHEP CAN	IV 7.5	III 7.8	II 1.2			III 2.5	III 7.1		II 5.1		
SIBB PRO											
SILE ACA											
SMIL RAC	I 0.1	II 0.3	III 0.9	II 0.3	IV 3.8			IV 1.0			
SMIL STE											
SMIL TRI				II 0.3					I 0.1		III 0.7
SOLI CAN											
SOLI MUL											
SOLI NEM											
SOLI SPA	I 0.0					II 0.3					
SOLI SPP											
SORB SCO											
SPHA ANG											
SPHA FUS											
SPHA GIR											
SPHA MAG											
SPHA NEM									I 0.1		I 0.8
SPHA RUS											I 10.8
SPHA TER											
SPHA WAR											I 0.3
SPIR BET	III 2.8	V 7.5	II 0.7		V 4.2	III 5.5	III 1.0	V 4.0	I 0.4		
SPIR ROM			I 0.1								
SPLA SPH											
STEL CAL											
STEL LOG											
STEL LON											
STEL MED	I 0.0										
STEN OCC											
STER TOM						I 0.2			I 0.3		
STRE AMP											
STRE ROS											

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
SYMP ALB	II 0.7	I 0.2	II 0.7	IV 1.0	I 0.2					I 0.2	
TARA OFF											
TETR ANG											
TETR MNI											
TETR PEL											
THAL OCC				II 0.3	I 1.2						
THAL VEN	I 0.2	I 0.2									
THAM SUB											
THUI ABI											
THUI REC											
TIAR TRI											
TIAR UNI											
TIMM AUS											
TOME NIT											
TONI COE											II 0.7
TORT NOR											
TORT RUR											
TRIS SPI											
TRIT EXS											
TROL ALB											
USNE ALP						I 0.1					
USNE CAV											
USNE GLA											
USNE SCA						I 0.1					
USNE SOR						I 0.1					
USNE SPP											
USNE SUB											
VACC CAE	II 0.6	II 3.3	I 0.1				II 0.3		III 1.4		
VACC MEM							I 0.3				
VACC MYR	I 0.9	III 0.8				V 7.3	V 4.4		V 2.0		I 0.3
VACC MYT											
VACC VIT	I 0.1					V 10.3	V 2.9		IV 0.9		V 1.2
VALE DIO	I 0.1		II 0.5	II 0.3					I 0.1	I 0.2	
VALE SIT											
VERA ESC											
VERO ALP											
VERO SER											
VIBU EDU	V 8.0	IV 5.5	V 10 6	V 4.5	V 9.4	I 0.2	I 0.1	V 4.7	I 0.1	IV 3.8	
VICI AME	III 0.6	II 0.5	II 0.3	II 0.3	I 0.2						
VIOL ADU											
VIOL CAN	I 0.2		II 0.5	III 1.3	I 0.4						
VIOL NEP											
VIOL ORB											
VIOL PAL											
VIOL REN	III 0.5		III 0.4					V 1.0		IV 0.8	
VIOL RUG											
VIOL SPP											

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ECOSYSTEMATIC UNITS	MW 1	MW 2	MW 3	MW 4	MW 5	MW 6	MW 7	MW 8	MW 9	MW 10	MW 11
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ZYGA ELE											

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ABIE BAL			I 0.1				I 0.4				
ABIE LAS			II 0.3		II 3.0	I 0.2	I 0.5			II 2.1	I 1.1
ACHI MIL								II 0.3		III 0.4	
ACON DEL											
ACTA RUB			I 0.4	III 1.5	I 1.0						
AGRO SCA											
AGRO TRA											
ALEC SAR											I 0.6
ALNU CRI		III 2.5	III 3.2	IV 11.8	III 1.0	I 0.8	II 3.5				II 2.1
ALNU TEN			I 0.1		I 0.7					III 1.3	
AMBL SER											
AMEL ALN		III 5.0	II 0.5	IV 1.8	II 2.6		I 0.0				
ANAS HEL											
ANDR POL	II 1.2										
ANEM LIT											
ANEM PAR											
ANTE NED											
ANTE MIC						I 0.2					
ANTE NEG											
ANTE RAC											
ANTE ROS											
ARAL NUD		III 3.0	V 9.8	IV 6.5	IV 9.0					II 1.9	
ARCT RUB											
ARCT UVA		III 2.5								I 0.1	
ARNI CHA											
ARNI COR			IV 2.0	IV 0.8	II 0.4	I 0.2	II 0.5			I 0.1	III 0.5
ARNI LAT											II 1.3
ARNI RYD											
ARTE NOR											
ASTE CIL			I 0.1	III 0.5	II 0.3	I 0.2	I 0.1	II 0.3		I 0.4	
ASTE CON		III 0.5	II 0.8	IV 3.8	I 0.3		I 0.2	II 0.3		II 0.3	I 0.4
ASTE HES											
ASTE LAE											
ASTE PUN											
ASTE SIB											
ASTE SHP										I 0.1	
ASTE SUB	I 0.2										
ASTR AME											
ASTR STR											
ATHY FIL											
AULA PAL	II 1.4				I 0.1			IV 5.0	V 9.0	I 0.6	II 0.7
BARB HAT											
BARB LYC							I 0.1				
BAZZ TRI											
BETU GLA	I 6.0				I 0.7	I 2.2			V 40.0		
BETU OCC	II 1.8	III 0.5	II 0.7		I 0.1						
BETU PAP		III 0.5	I 0.1		III 0.6					I 0.1	
BETU PUM	I 0.4										I 0.2
BETU SPP	I 8.0										
BOTR VIR											

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PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
BRAC ALB											
BRAC CAM				II 0.3							
BRAC GRO											
BRAC HYL							I 0.1				
BRAC LEI											
BRAC MIL											
BRAC SAL		III 0.5	I 0.1	III 1.3	II 0.2		I 0.1				
BRAC SPP			I 0.1							I 0.1	
BRAC STA					I 1.1	I 0.2					
BROM INE											
BRYO CAP			I 0.0								I 0.1
BRYJ FRE			I 0.0		I 0.1	I 0.5					II 0.7
BRYO FUR			I 0.0								
BRYO FUS			I 0.1		I 0.1	II 0.4	I 0.0				III 0.6
BRYO SPP											
BRYU PSE											
CALA CAN	I 0.2		I 0.8	II 5.0	II 0.5	I 0.1	I 0.2		III 0.5		II 1.1
CALA INE										I 0.3	I 0.2
CALA SPP			I 0.1							I 0.1	
CALA STR	I 1.0	III 0.5	III 0.5	III 2.0	II 0.4	I 0.2	I 0.3			II 0.3	I 0.1
CALL GIG											
CAMP HIS											
CAMP LAS											
CAMP ROT											
CAMP STE									III 0.5		
CARE ALB											
CARE AQU	III 6.0	III 0.5							III 5.0		
CARE BRU											
CARE CAP							I 0.1				
CARE CHO											
CARE COC										I 0.1	
CARE CON											
CARE DIA									III 1.5		
CARE DIS	I 0.4							II 5.0		I 0.3	
CARE GYN									V 3.0		
CARE MAC											
CARE MIC	I 0.6										
CARE NIG											
CARE PAP											
CARE PAU	I 0.4							II 0.3			
CARE PEN											
CARE PRA											
CARE ROS											
CARE ROT											
CARE SCI											
CARE SIC											
CARE SPP	I 0.6									I 3.6	
CARE TEN											
CARE TOL											
CARE VAG								IV 4.7		I 0.1	

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PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS / SPECIES	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
CASS TET											
CAST MIN				II 0.8			I 0.1				
CAST OCC											
CATO NIG											
CERA ARV											
CERA BEE											
CERA PUR			I 0.0								
CERA SPP											
CETR ARE						I 0.2					
CETR CHL			I 0.0								
CETR CUC											
CETR ERI						I 0.1					
CETR HAL			I 0.0		I 0.1	II 0.9					III 1.8
CETR ISL											
CETR MER											I 0.1
CETR NIV											
CETR PIN			I 0.1		II 0.1	II 0.9					III 1.8
CLAD CAP											I 0.1
CLAD CAR											
CLAD CEN	I 0.2		I 0.0				I 0.0				I 0.1
CLAD CHL			I 0.1		II 0.1	I 0.1	I 0.0		III 1.0		
CLAD COC						I 0.1	I 0.0				
CLAD COI					I 0.1	I 0.1					
CLAD CON			I 0.1		II 0.1	I 0.1	I 0.0				I 0.1
CLAD COR						II 0.3	I 0.2				I 0.1
CLAD CRI	I 0.4										I 0.1
CLAD DEF	II 1.0										
CLAD ECM						I 0.2		II 0.3			I 0.1
CLAD FIM			I 0.0								
CLAD FUS											
CLAD GON	I 0.2		I 0.0			II 0.3					
CLAD GRA	I 0.2		I 0.1			IV 0.6	II 0.2				I 0.1
CLAD MIT	II 0.6	III 0.5	I 0.2			V 10.1	II 0.4	V 1.0			II 0.2
CLAD PHY						II 0.4	I 0.0				
CLAD PLE						I 0.1					
CLAD PYX											
CLAD RAN						I 0.2					
CLAD SPP											
CLAD SQU											
CLAD STE						I 0.2					
CLAD UNC											
CLEM OCC											
CLIM DEN											
CORA TRI											
CORN CAN		V 5.5	V 7.5	V 6.0	V 7.4	V 6.0	V 5.9	IV 1.3		IV 2.4	V 10.1
CORN STO			II 0.2	II 1.5	II 2.9					I 1.9	
CORY COR		III 3.5									
CYPR PAS											
DACT ARC											
DANT CAL											

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ECOSYSTEMATIC UNITS / SPECIES	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
DELP GLA			I 0.0	II 0.3	III 0.4					I 0.1	
DESC CES											
DICR ACU						I 0.1					
DICR BRE			I 0.2								
DICR FLA					I 0.1		I 0.1				I 0.1
DICR FRA					I 0.1						
DICR FUS			I 0.1		I 0.1	I 0.1	I 0.1				
DICR POL			I 0.2			II 0.3	III 0.6	II 0.3	III 2.0	II 2.0	
DICR SCO		III 2.0	I 0.2			I 0.2	I 0.3	II 0.3		I 0.1	II 0.2
DICR SPP											
DICR UND											I 0.3
DISP TRA			I 0.1	II 0.3	I 0.1			II 0.3			
DRAB AUR											
DREP REV											
DREP UNC	I 0.2			II 0.3							
DRYA OCT											
DRYO CAR			I 0.2								
ELYM INN		V 1.0	II 0.3	III 1.5	I 0.7	III 0.7	III 0.9			II 2.6	III 0.9
EMPE NIG											I 0.2
EPIL ANG		V 1.0	IV 3.4	V 4.0	II 1.8	II 0.3	III 1.1			III 0.7	IV 2.2
EPIL CIL	I 0.2										
EPIL LAT											
EPIL PAL											
EQUI ARV	I 1.0		I 0.2	II 0.3	II 0.3			II 1.0	III 0.5	V 8.6	II 0.2
EQUI HYE										I 0.1	
EQUI PRA	I 0.4		II 0.5		II 0.3	I 0.2	I 0.1			III 2.6	I 0.1
EQUI SCI	I 0.2		I 0.1		I 0.1		I 0.1	IV 1.0	III 0.5	III 0.9	I 0.3
EQUI SYL	I 0.2		III 0.7	III 0.8	II 0.9		II 0.3	IV 3.0		II 0.7	II 0.6
ERIG HUM											
ERIG PER											I 0.8
ERIG SPP			I 0.8								
ERIO VAG	II 0.6										
ERIO VIR											
EURH PUL		III 0.5		II 1.3	I 0.1					I 0.3	
EVER MES											
FEST SAX											
FRAG VIR	I 0.2	III 0.5	I 0.1	II 0.3	II 0.3		I 0.3			I! 0.9	
GALI BOR	I 0.2	V 1.0			III 0.4		I 0.1	II 0.3	III 0.5	II 0.4	
GALI LAB									III 0.5		
GALI TRI			I 0.2	III 0.8	II 0.3			II 0.3		II 0.4	
GAUL HIS			I 0.1		I 0.7	I 0.5	I 0.4	II 1.0			I 0.3
GENT AMA											
GENT CAL											
GENT GLA											
GENT PRO											
GENT PRP											
GEOC LIV		III 0.5			I 0.1	I 0.2	I 0.2				I 0.1
GEOL LIV											

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
GERA RIC											
GERA VIS											
GEUM ALE											
GEUM RIV								II 0.3			
GEUM SPP										I 0.1	
GEUM TRI										I 0.3	
GLYC STR										I 0.1	
GOOD OBL			I 0.1								
GYMN DRY			IV 2.8		III 1.1		I 0.6			I 0.1	II 0.3
HABA ORB			I 0.1								
HABE HYP											
HABE OBT											
HABE VIR											
HALE DEF		III 0.5									
HEDY ALP										I 0.7	
HEDY SUL				II 0.3							
HELO BLA	I 0.2									I 0.3	
HERA LAN			I 0.0	II 0.3	I 0.3		I 0.0				
HIER ODO											
HIER TRI											
HIER UMB											
HYLO SPL		V 1.0	IV 5.3	II 1.3	IV 27.9	IV 4.0	V 27.5	V 35.7		V 33.1	V 14.6
HYPN PRA									III 2.0		
HYPO AUS											
HYPO BIT											
HYPO ENT											
HYPO PHY			I 0.1		II 0.1	II 0.9	I 0.0				III 1.8
HYPO TUB			I 0.0		I 0.1						I 0.1
ICMA ERI	I 0.2										
JAME AUT					II 0.1						
JUNC BAL											
JUNC DRU											
JUNI COM											
KALM POL	I 0.2										
KOBR MYO											
LARI LAR	IV 5.6								V 15.0		
LATH OCH		V 1.0	III 1.0	III 1.5	II 0.9		II 0.3			II 0.3	I 0.1
LATH VEN											
LECA RUB											
LEDU GRO	II 9.4	III 1.0	I 0.5	III 2.5		V 15.0	V 20.6	V 27.0	III 0.5	II 0.7	V 25.6
LEPI REP					I 0.1						
LEPT PYR					I 0.1						
LETH VUL											
LILI PHI											
LINN BOR	I 0.2	V 7.0	V 3.6	IV 2.8	V 5.3	V 4.5	V 2.6	II 0.3		V 3.4	V 5.9
LIST BOR											

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
LIST COR											
LOBA LIN											
LOBA PUL					I 0.1						
LONI DIO					I 0.1					I 0.1	
LONI INV	I 1.0	III 1.0	IV 2.6	IV 1.8	V 3.6	I 0.2	II 1.6	IV 2.7		IV 1.3	I 0.6
LOPH BIN											
LOPH LON											I 0.1
LOPH POR											
LOPH VEN											I 0.1
LUPI SER											
LUZU PAR											
LUZU PIP											
LYCO ANN			IV 2.2		I 0.1	II 1.3	I 0.3				IV 2.0
LYCO CLA						I 0.2					I 0.4
LYCO COM		III 3.0									I 0.3
MAIA CAN		V 1.0	V 1.4	III 0.8	III 0.9	III 4.3	II 0.6			I 0.1	II 0.7
MELA LIN											
MELA UNE											
MENY TRI	I 4.0										
MENZ FER						I 0.2					
MERT PAN	I 0.4	III 0.5	I 0.2	III 2.5	III 3.9		II 0.3	II 0.3		IV 2.4	II 0.3
MINU BIF											
MINU OBT											
MITE NUD	I 0.4	III 0.5	IV 0.9	V 2.0	V 1.8		I 0.2	IV 1.0	III 0.5	IV 1.9	
MNIU AFF										I 0.4	
MNIU ARI										I 0.1	
MNIU SPI										I 0.1	
MOEH LAT											
MONE UNI					I 0.1					II 0.3	
MYLI AND	II 5.0										
MYOS ALP											
NEPH BEL					II 0.1						
NEPH EXP											
NEPH PAR					I 0.1						
OPLO HOR			I 2.2		III 1.5		I 0.0				
ORTH SEC		III 0.5	I 0.5	III 0.5		IV 0.8	I 0.1			I 0.4	I 0.1
ORYZ ASP											
ORYZ EXI		III 1.0									
ORYZ SPE											
OSMO CHI				II 0.3							
OSMO DEP			I 0.1		I 0.1					III 0.4	
OSMO PUR											
OXYC MIC	III 0.6						I 0.3	II 0.7	V 2.5	I 0.1	
OXYR DIG											
OXYT DEF											
OXYT POD											
OXYT SPL											

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
PALU SQU									III 0.5		
PARM ALE			I 0.0				I 0.0				
PARM AMB			I 0.0			II 0.9					III 1.8
PARM CHL											
PARM HYP			I 0.0			II 0.9	I 0.0				II 1.7
PARM SUL			I 0.1		II 0.1		I 0.0				II 0.1
PARN FIM											
PARN PAL											
PEDI BRA											I 0.1
PEDI CAP											
PEDI LAB									III 0.5		
PEDI PAR	I 0.4										
PEDI SPP											
PELT APH				II 0.3		III 1.0	IV 1.4	IV 1.0		II 0.9	IV 1.2
PELT CAN						III 0.5					
PELT MAL				II 0.3		II 0.5	II 0.5	IV 1.0		I 0.3	II 0.4
PELT POL					I 0.1						
PENS PRO											
PETA PAL	I 0.2	III 0.5	III 1.2	V 2.0	V 3.3	II 0.8	III 0.7	IV 1.7		III 1.7	IV 2.2
PETA SAG	I 0.6										
PHLE COM											
PHYL EMP											
PHYS ADS					I 0.1						
PICE ENE											I 0.2
PICE ENG											
PICE GLA		V 22.5	III 0.7	II 2.3	V 30.6	I 0.2	II 0.3			V 27.9	III 0.8
PICE MAR	III 3.6		I 1.1		I 0.1	III 2.5	V 9.4	V 44.3		III 3.6	II 0.8
PINU BAN		III 2.5									
PINU CON			V 32.5		II 4.6	V 35.0	V 18.2	II 0.3		I 0.4	V 39.1
PLAD MED											
PLAG ARI											
PLAG CUS					I 0.1						
PLAG DRU		III 0.5			II 1.1					I 0.1	
PLAG ELL	II 1.4								III 0.5	II 1.9	
PLAG LAE											
PLAG MED			I 0.1	IV 2.5	I 0.1						
PLAT GLA			I 0.1			I 0.1					I 0.1
PLEU SCH		V 17.5	V 16.2	III 1.5	V 9.0	V 33.3	V 35.1	V 20.0		V 7.4	V 44.8
POA ALP											
POA COM											
POA PAL											
POA PRA											
POHL NUT			I 0.0		I 0.1		I 0.1	II 0.3	III 1.0	I 0.1	I 0.1
POLE PUL											
POLE SPP											
POLY COM							I 0.1				I 0.1
POLY JUN			I 0.1	II 0.3		II 0.3	I 0.1	II 0.3	III 1.0	I 0.6	III 0.6
POLY PIL							I 0.1				
POLY STR									III 0.5		I 0.1
POLY VIV									III 0.5		
POPU BAL		III 2.5	II 1.1	III 10.0	II 1.4		I 0.1			III 2.7	

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
POPU TRE		III 2.5	III 4.8	V 32.5	III 3.0	I 0.1	II 2.2			I 0.6	I 0.6
POTE DIV											
POTE GRA											
POTE HOO											
POTE PAL											
PRUN PEN											
PRUN VIR											
PTIL CIL			I 0.1				I 0.1				
PTIL CRI		III 0.5	V 8.5	II 1.3	V 11.9	IV 5.0	V 18.6	V 12.0		V 16.4	V 17.9
PTIL PUL			I 0.8		II 0.1	I 0.1	I 0.0				I 0.1
PYLA POL					I 0.1						
PYRO ASA		III 0.5	IV 1.8	IV 1.3	IV 1.8	I 0.2	II 0.6			I 0.1	II 0.3
PYRO CHL			I 0.1			II 0.5				I 0.1	I 0.1
PYRO MIN											
RAMA FAS					I 0.1						I 0.1
RAMA THR			I 0.0								
RANU OCC											
RHIZ GRA											
RHIZ PSE								II 1.7			
RHOD ALB											
RHYT TRI					I 0.1					I 0.1	
RIBE AME								II 0.3			
RIBE HIR					I 0.7						
RIBE INE	I 0.2										
RIBE LAC			II 0.4	II 0.5	II 0.7					II 0.6	II 0.4
RIBE OXY			I 0.2		I 0.7		I 0.3				
RIBE SPP											
RIBE TRI	I 0.2		I 0.2	II 0.3	I 0.7					I 0.1	
ROSA ACI		V 10.0	V 7.5	V 6.0	V 3.6	IV 1.5	V 3.1	IV 1.0		V 2.7	IV 1.8
RUBU ACU											
RUBU ARC	II 0.6									II 0.3	
RUBU CHA	II 1.8									I 0.1	
RUBU IDA		III 4.0	II 0.3	III 1.0	I 0.3					I 0.1	
RUBU PAA											
RUBU PAR			II 2.6	II 0.5	II 1.4						
RUBU PED		III 0.5	I 0.2		II 0.4		I 0.5				III 2.9
RUBU PUB		III 0.5	V 2.2	V 4.3	V 3.7		II 0.6	II 1.0		V 2.7	II 0.4
RUBU STR					I 0.7						
RUME ALP											
SALI ARC											
SALI ATH											
SALI BAA											
SALI BAR											I 0.6
SALI BEB	I 0.2			II 0.3	I 0.3	I 1.2	I 0.4				I 0.1
SALI CAN									V 2.5		
SALI DIS											
SALI DRU	I 0.4									I 0.3	
SALI FAR											
SALI GLA			I 0.3				I 0.1	II 0.3		I 0.3	I 0.6

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PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS / SPECIES	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SALI LUC											
SALI MEL										I 0.1	
SALI MYR	II 0.6							II 0.7	III 0.5		
SALI OCC											
SALI PED											
SALI PLA	I 0.2										
SALI PYR											
SALI RET											
SALI SCO			I 0.2	II 0.5	I 0.1	I 0.3	I 0.2				II 0.4
SALI SPP	I 2.0		I 0.2			I 0.2	I 0.1				
SALI STO											
SAMB RAC											
SAXI TRI											
SCHI PUR											
SCIR CAE											
SELA SEL											
SENE IND											
SENE PAU											
SENE TRI											
SHEP ARG											
SHEP CAN	I 0.2	III 0.5				I 1.0	I 0.5			I 2.1	
SIBB PRO											
SILE ACA											
SMIL RAC			III 1.2	II 0.5	II 2.4		I 0.2				I 0.1
SMIL STE										III 0.6	
SMIL TRI	III 4.2							II 0.7	V 6.0		
SOLI CAN											
SOLI MUL											
SOLI NEM											
SOLI SPA											
SOLI SPP											
SORB SCO			III 0.8		III 0.5		I 0.7				II 0.9
SPHA ANG	I 7.0								III 47.5		
SPHA FUS											
SPHA GIR											
SPHA MAG	II 24.6										
SPHA NEM											
SPHA RUS											II 0.3
SPHA TER											
SPHA WAR	III 18.0							IV 0.7	III 26.0	I 0.1	
SPIR BET		III 1.0	V 4.8	IV 5.0	III 1.9	II 0.5	III 1.3			I 0.1	II 1.4
SPIR ROM	I 0.2										
SPLA SPH						I 0.2					
STEL CAL											
STEL LOG									III 0.5		
STEL LON	I 0.2								III 0.5		
STEL MED											
STEN OCC											
STER TOM						IV 1.0	I 0.1				
STRE AMP			II 1.4		I 1.4		I 0.2				III 1.1
STRE ROS											

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
SYMP ALB			I 0.1	II 0.5	I 0.7						
TARA OFF											
TETR ANG					I 0.1						
TETR MNI					I 0.1	I 0.5					
TETR PEL											
THAL OCC										I 0.1	
THAL VEN				II 0.3	I 0.7					I 0.1	
THAM SUB											
THUI ABI											
THUI REC											
TIAR TRI											
TIAR UNI			I 0.2								I 0.6
TIMM AUS											
TOME NIT	III 23.2							II 0.7	V 1.5		
TONI COE											
TORT NOR											
TORT RUR											
TRIS SPI											I 0.1
TRIT EXS											
TROL ALB											
USNE ALP			I 0.1		II 0.1		I 0.0				II 0.1
USNE CAV					I 0.1						
USNE GLA				II 0.8							
USNE SCA							I 0.0				II 1.7
USNE SOR			I 0.1		I 0.1	II 0.9					II 0.1
USNE SPP											
USNE SUB			I 0.1	II 0.5	II 0.1	I 0.1					I 0.1
VACC CAE			I 0.3	III 1.8	I 0.1	II 1.7	II 0.6				IV 2.7
VACC MEM			I 0.5		I 0.1	I 0.5	II 1.8				II 1.1
VACC MYR		III 1.5	I 0.1	II 5.0		V 3.5	IV 4.4	II 0.7		I 0.1	V 6.1
VACC MYT											
VACC VIT	I 0.2	III 0.5	I 0.2		I 0.3	V 4.5	IV 4.1	II 1.7	III 0.5	I 0.1	IV 15.4
VALE DIO				II 0.3							
VALE SIT											
VERA ESC											I 0.6
VERO ALP											
VERO SER											
VIBU EDU		III 1.5	V 8.5	V 9.3	V 8.7		II 1.7			III 2.4	I 0.3
VICI AME				II 0.3						I 0.1	
VIOL ADU			I 0.2								
VIOL CAN				II 2.0	I 0.3						
VIOL NEP		III 0.5									
VIOL ORB											
VIOL PAL											
VIOL REN			III 0.5	III 0.5	III 1.1		I 0.2			II 0.6	
VIOL RUG											
VIOL SPP											

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ECOSYSTEMATIC UNITS	MW 12	MW 13	BF 1	BF 2	BF 3	BF 4	BF 5	BF 6	BF 7	BF 8	BU 1
SPECIES	PRESENCE CLASS AND MEAN SPECIFS SIGNIFICANCE										
ZYGA ELE											

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ABIE BAL											
ABIE LAS	III 1.3	I 0.2		II 2.2	V 7.5	I 1.4					IV 2.8
ACHI MIL						I 0.2	III 0.5	II 0.3	V 2.0		
ACON DEL											
ACTA RUB		I 0.5		II 1.8	II 1.8						
AGRO SCA										III 0.5	
AGRO TRA					I 0.1				III 3.0		
ALEC SAR				I 0.1	I 0.0						I 0.0
ALNU CRI	III 4.0	V 19.2	V 45.0	III 1.8	I 0.8						I 0.2
ALNU TEN											I 0.1
AMEL SER										III 0.5	
AMEL ALN										III 4.0	
ANAS HEL					I 0.1						
ANDR POL							I 0.2				
ANEM LIT											
ANEM PAR				I 0.2		I 0.2	I 0.2				
ANTE MED											
ANTE MIC											
ANTE NEG											
ANTE RAC											
ANTE ROS											
ARAL NUD		I 1.2		I 1.4						III 1.0	
ARCT RUB							I 1.0				
ARCT UVA										III 1.5	
ARNI CHA											
ARNI COR	II 1.0	IV 1.2	III 0.5	IV 4.6	III 2.6	I 0.2					I 0.6
ARNI LAT											III 1.3
ARNI RYD											
ARTE NOR											
ASTE CIL		II 0.5									
ASTE CON	I 0.1	V 6.5		II 0.8	I 0.3		I 0.2		II 0.5	V 8.5	
ASTE HES											
ASTE LAE	I 0.1										
ASTE PUN									II 1.0		
ASTE SIB											
ASTE SPP											
ASTE SUB											
ASTR AME					I 0.1						
ASTR STR											
ATHY FIL				II 0.6							
AULA PAL			II 0.3			II 2.0	V 4.8	V 16.0	II 2.0		I 0.1
BARB HAT				I 0.1							I 0.0
BARB LYC											I 0.6
BAZZ TRI											
BETU GLA							V 7.8	V 44.0	III 23.8		
BETU OCC											
BETU PAP											
BETU PUM							I 0.5				
BETU SPP											
BOTR VIR		I 0.2									

ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
BRAC ALB											
BRAC CAM											
BRAC GRO											
BRAC HYL											
BRAC LEI				I 1.6							
BRAC MIL							I 0.2				
BRAC SAL		II 0.3			I 0.0						I 0.1
BRAC SPP									II 0.3		
BRAC STA		I 1.2		I 1.0							I 0.1
BROM INE									III 6.0		
BRYO CAP					I 0.1						I 0.0
BRYO FRE		II 1.0		II 0.7	II 1.1						II 1.1
BRYO FUR											
BRYO FUS	I 0.1	II 0.7		V 2.6	II 0.3	I 1.0					II 0.6
BRYO SPP		I 0.8					I 0.8				I 0.2
BRYU PSE									II 1.0		
CALA CAN	I 0.1	III 1.3		II 0.3	II 0.2		I 0.2			III 0.5	I 0.4
CALA INE				I 0.6		I 0.2		IV 1.7			
CALA SPP			II 0.3								
CALA STR	III 0.6	I 0.3	III 0.5	II 1.0	II 0.3		I 0.2			III 0.5	I 0.1
CALL GIG											
CAMP HIS											
CAMP LAS											
CAMP ROT											
CAMP STE											
CARE ALB											
CARE AQU							III 2.8	IV 3.3	IV 2.0		
CARE BRU								II 0.3			
CARE CAP											
CARE CHO											
CARE COC											
CARE CON											
CARE DIA											
CARE DIS							I 0.7	IV 1.7			
CARE GYN							III 1.3	II 1.0	II 0.5		
CARE MAC											
CARE MIC											
CARE NIG											
CARE PAP							I 0.3	IV 1.0	II 0.3		
CARE PAU											
CARE PEN											
CARE PRA									II 1.3		
CARE ROS											
CARE ROT							I 0.2				
CARE SCI									II 1.0		
CARE SIC											
CARE SPP					I 0.1		I 0.3		II 1.0		
CARE TEN							II 0.3	II 0.3			
CARE TOL											
CARE VAG							V 1.7	II 1.0			

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SUMMARY VEGETATION TABLE

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EDMONTON, ALBERTA

PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
CASS TET											
CAST MIN										V 1.5	
CAST OCC											
CATO NIG											
CERA ARV											
CERA BEE											
CERA PUR											
CERA SPP									II 0.3		
CETR ARE											
CETR CHL					I 0.0						
CETR CUC										III 0.5	
CETR ERI				I 0.1							I 0.0
CETR HAL	I 0.1	III 2.5		IV 5.1	III 1.3	I 1.0					III 1.4
CETR ISL										III 0.5	I 0.1
CETR MER											I 0.1
CETR NIV				I 0.1							
CETR PIN	I 0.1	III 2.5		V 5.2	III 1.3		I 0.8				III 0.9
CLAD CAP											
CLAD CAR											I 0.0
CLAD CEN	I 0.1			I 0.1	II 0.1						I 0.1
CLAD CHL					II 0.2						I 0.1
CLAD COC										III 0.5	
CLAD COI				II 0.2	I 0.1						I 0.1
CLAD CON	I 0.1			I 0.1	I 0.1						I 0.2
CLAD COR	I 0.1	I 0.2		I 0.1	I 0.1	I 1.8				III 0.5	I 0.1
CLAD CRI						I 0.2				III 0.5	I 0.1
CLAD DEF	I 0.1										I 0.1
CLAD ECM	I 0.2				I 0.1					III 0.5	II 0.5
CLAD FIM											I 0.0
CLAD FUS											
CLAD GON	I 0.1			I 0.1							II 0.3
CLAD GRA				I 0.1		I 1.8				III 1.0	II 0.8
CLAD MIT	I 0.2	I 0.5			II 0.2	III 1.2	I 0.3			III 3.0	III 0.7
CLAD PHY	I 0.1				I 0.0						I 0.0
CLAD PLE											
CLAD PYX											
CLAD RAN						II 0.8				III 0.5	
CLAD SPP	I 0.2						I 0.2				I 0.0
CLAD SQU											I 0.1
CLAD STE						I 0.2					
CLAD UNC											I 0.1
CLEM OCC										III 0.5	
CLIM DEN									III 2.1		
CORA TRI				I 0.2	I 0.1						I 0.0
CORN CAN	V 7.0	V 5.5	V 8.8	V 10.2	V 7.4	V 7.4	III 1.2			III 2.0	V 5.2
CORN STO											
CORY COR											
CYPR PAS											
DACT ARC					I 0.1						
DANT CAL											

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
DELP GLA		I 0.3		I 0.6	II 0.3		I 0.2	II 0.3	V 2.5		
DESC CES								II 0.7	II 0.3		
DICR ACU											
DICR BRE	I 0.2									III 0.5	I 2.0
DICR FLA					I 0.0						I 0.0
DICR FRA											I 0.0
DICR FUS	I 0.1	I 0.3	II 0.8	III 0.6	II 0.3	II 0.8					
DICR POL	I 0.6	II 0.3	II 0.3		I 0.2	III 0.6					III 0.8
DICR SCO	II 0.3	III 1.2		I 0.4	II 1.0	IV 1.2		II 0.7		III 0.5	I 0.3
DICR SPP											II 0.4
DICR UND											
DISP TRA											
DRAB AUR										III 1.0	I 0.0
DREP REV											
DREP UNC			II 0.3								
DRYA OCT										III 0.5	
DRYO CAR			II 0.3								
ELYM INN	I 0.2	IV 4.5		II 1.6	III 1.2	II 0.4	II 1.0		III 1.0	V 10.5	I 0.1
EMPE NIG							II 0.7				II 2.5
EPIL ANG	II 1.4	V 6.5	IV 1.5	IV 3.8	IV 1.2	I 0.2			III 1.0		II 0.6
EPIL CIL											
EPIL LAT											
EPIL PAL											
EQUI ARV		III 1.2		I 0.2	II 0.7		IV 8.7				I 0.1
EQUI HYE								II 0.3			
EQUI PRA				III 1.8	II 1.5	I 0.2					I 0.0
EQUI SCI		I 0.2	II 0.3		II 0.4	II 0.4	V 1.8				I 0.0
EQUI SYL		II 0.5	III 0.8	II 0.6	II 0.8	II 0.8	II 0.8				II 0.5
ERIG HUM											
ERIG PER											
ERIG SPP											
ERIO VAG											
ERIO VIR											
EURH PUL					I 0.0						
EVER MES											I 3.0
FEST SAX											
FRAG VIR		II 0.8			III 0.8	I 0.2	I 0.2		V 2.0	V 1.0	
GALI BOR					I 0.2	I 0.2	II 0.5		IV 1.5	III 0.5	
GALI LAB											
GALI TRI		III 0.5	II 0.3		II 0.2			II 0.3			
GAUL HIS						I 2.0	I 0.5				
GENT AMA									II 0.3		
GENT CAL											
GENT GLA											
GENT PRO											
GENT PRP											
GEOC LIV											
GEOL LIV											

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
GERA RIC					I 0.3						
GERA VIS					I 0.0						
GEUM ALE									II 0.3		
GEUM RIV								IV 3.0	II 3.0		
GEUM SPP											
GEUM TRI									II 4.5		
GLYC STR											
GOOD OBL											
GYMN DRY		I 1.7		III 7.4	I 3.2						I 0.6
HABA ORB											
HABE HYP											
HABE OBT		I 0.2									
HABE VIR	I 0.1										
HALE DEF											
HEDY ALP											
HEDY SUL											
HELO BLA											
HERA LAN		II 2.2		II 2.0	II 1.2						
HIER ODO											
HIER TRI											
HIER UMB										III 0.5	
HYLO SPL	V 15.8	V 8.3		IV 14.2	V 23.0	V 44.2	V 27.2			III 1.5	V 11.9
HYPN PRA									II 0.3		
HYPO AUS					I 0.0						
HYPO BIT											I 0.0
HYPO ENT					I 0.0						
HYPO PHY	I 0.1	III 2.5		V 5.2	III 1.4		I 0.8				III 1.4
HYPO TUB					I 0.1						I 0.0
ICMA ERI				I 0.1			I 0.2				
JAME AUT				I 0.1	I 0.1						I 0.0
JUNC BAL									II 0.3		
JUNC DRU											
JUNI COM											I 0.2
KALM POL											
KOBR MYO											
LARI LAR							I 0.5	IV 7.7			
LATH OCH		I 0.8		I 1.0	I 0.2					V 3.0	
LATH VEN											
LECA RUB											
LEDU GRO	V 9.8		V 7.3	I 2.0		V 14.4	IV 13.3	II 4.0		III 2.5	V 5.9
LEPI REP				I 0.1							I 0.0
LEPT PYR											
LETH VUL											I 0.0
LILI PHI											
LINN BOR	V 3.2	V 5.2	IV 1.0	V 10.8	V 7.3	IV 1.2	III 0.7			III 0.5	IV 1.6
LIST BOR					I 0.1		I 0.2				

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SUMMARY VEGETATION TABLE

ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
LIST COR	I 0.2				I 0.1						I 0.0
LOBA LIN											
LOBA PUL											
LONI DIO											
LONI INV	I 0.2	II 2.0		II 5.0	IV 4.0	I 1.2	IV 1.5				
LOPH BIN											
LOPH LON					I 0.0						
LOPH POR											
LOPH VEN											
LUPI SER											
LUZU PAR									II 0.3		
LUZU PIP											
LYCO ANN	IV 1.6		II 1.0	V 6.1	III 0.8	III 0.8					III 1.9
LYCO CLA											I 0.1
LYCO COM	II 1.2					I 1.4				III 0.5	
MAIA CAN		V 2.3	II 0.3	II 0.7	I 0.5						I 0.3
MELA LIN											
MELA UNE											
MENY TRI											
MENZ FER		I 0.2									III 10.3
MERT PAN		IV 3.3		III 2.8	III 1.8	II 0.4	I 0.2	II 0.3	V 3.5	III 0.5	
MINU BIF											
MINU OBT											
MITE NUD		IV 1.0	II 0.8	II 1.2	III 1.3	I 0.2	V 1.0	IV 1.0	II 0.5		I 0.1
MNIU AFF					I 0.1				II 0.8		
MNIU ARI											
MNIU SPI					I 0.1						
MOEH LAT											
MONE UNI					I 0.2		I 0.2				
MYLI ANO											
MYOS ALP											
NEPH BEL											
NEPH EXP											
NEPH PAR											
OPLO HOR					I 0.4						
ORTH SEC	IV 0.7	I 0.2	III 0.5	IV 1.2	III 0.8	I 0.6	I 0.2				III 0.8
ORYZ ASP											
ORYZ EXI											
ORYZ SPE											
OSMO CHI		I 0.2			I 0.3						
OSMO DEP			II 0.3								
OSMO PUR				I 0.2							
OXYC MIC							III 1.3	IV 1.0			
OXYR DIG											
OXYT DEF											
OXYT POD											
OXYT SPL											

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
PALU SOU											
PARM ALE											I 0.0
PARM AMB	I 0.1	II 1.7		IV 3.1	II 1.3						III 1.4
PARM CHL											
PARM HYP	I 0.1	III 2.5		V 3.2	III 1.3	I 1.0					III 1.4
PARM SUL	I 0.1			I 0.1	II 0.1						I 0.1
PARN FIM											
PARN PAL						I 0.2					
PEDI BRA							I 0.2				
PEDI CAP											
PEDI LAB							I 0.2			III 0.5	
PEDI PAR											
PEDI SPP											
PELT APH	III 2.8	III 1.0	II 0.3	IV 6.0	III 1.6	V 4.4	III 1.0			III 0.5	IV 2.5
PELT CAN					I 0.1						I 0.0
PELT MAL	I 0.8					IV 2.6	III 0.5	II 0.5		III 0.5	II 0.3
PELT POL											
PENS PRO											
PETA PAL	II 0.6	III 0.5	II 0.3	IV 1.5	IV 2.3	III 0.8	V 1.5			III 0.5	II 0.4
PETA SAG							I 0.2		II 0.5		
PHLE COM									II 0.3		
PHYL EMP											I 0.4
PHYS ADS											
PICE ENE	I 0.2	I 0.8		I 1.0	III 16.9		I 1.2			III 1.5	II 0.5
PICE ENG											I 0.2
PICE GLA	I 0.2	II 0.8	II 0.5	II 0.4	II 13.9	I 0.2			II 0.3		I 0.1
PICE MAR	II 0.6	I 0.2	II 1.3	I 0.2		V 28.0	V 24.3	II 0.7	II 0.5		II 0.7
PINU BAN											
PINU CON	V 31.4	V 47.5	V 33.8	V 36.6	IV 8.5	V 11.0	I 0.3			III 6.0	V 32.8
PLAD MED											
PLAG ARI											
PLAG CUS					I 0.0						
PLAG DRU			II 0.5								
PLAG ELL		I 0.2						II 0.3	II 1.3		
PLAG LAE	I 0.1		II 0.3								
PLAG MED		I 0.2		II 0.8	I 0.1						
PLAT GLA	I 0.1			I 0.1	II 0.9						
PLEU SCH	V 34.6	V 11.5	V 37.8	V 17.6	V 20.5	IV 12.8	IV 7.3			III 3.0	V 40.9
POA ALP											
POA COM									II 0.5		
POA PAL									II 1.0		
POA PRA											
POHL NUT	I 0.1	I 0.2		III 0.9	I 0.1	I 0.2				III 0.5	III 0.8
POLE PUL									III 0.8		
POLE SPP											
POLY COM			IV 1.3		I 0.0						I 0.1
POLY JUN			II 0.3	II 0.6	II 0.5	II 0.8		II 2.0		III 0.5	II 0.3
POLY PIL											
POLY STR						I 0.2	I 0.3	II 0.3			
POLY VIV									II 0.3		
POPU BAL		I 1.7		I 1.0	I 0.2						

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
POPU TRE	I 2.0	II 2.0		III 4.6	I 0.2					V 22.5	
POTE DIV											
POTE GRA									II 0.3		
POTE HOO											
POTE PAL							I 0.2				
PRUN PEN											
PRUN VIR											
PTIL CIL		I 0.2									
PTIL CRI	V 19.6	IV 7.2	V 22.8	V 7.6	V 21.5	IV 14.2	IV 7.8				V 17.9
PTIL PUL		I 0.2	II 0.3	I 0.1	I 0.1						I 0.1
PYLA POL										III 0.5	
PYRO ASA	I 0.1	V 2.7	III 1.0	III 5.4	III 0.8						I 0.1
PYRO CHL	I 0.2			II 0.4	II 0.3						I 0.0
PYRO MIN											
RAMA FAS					I 0.1						
RAMA THR					I 0.0						
RANU OCC											
RHIZ GRA								II 1.3			
RHIZ PSE							I 1.3				
RHOD ALB	I 0.6				I 0.1						V 16.9
RHYT TRI					I 0.5						
RIBE AME											
RIBE HIR											
RIBE INE											
RIBE LAC		III 1.5		II 1.0	III 1.7	I 0.2					I 0.1
RIBE OXY				I 0.1	I 1.3						
RIBE SPP				I 0.4							
RIBE TRI	I 0.2	I 0.2		I 0.2	I 0.2						
ROSA ACI	I 0.6	V 4.8	III 0.8	IV 2.8	IV 2.4	IV 1.4	I 0.7			V 3.5	I 0.1
RUBU ACU											
RUBU ARC							II 0.3	IV 1.3	II 0.5		
RUBU CHA							III 3.3				
RUBU IDA		I 0.8	II 0.5	II 0.8	I 0.4						
RUBU PAA				I 1.0							
RUBU PAR		I 2.7		I 0.2	I 0.5						
RUBU PED	V 3.2	I 0.7	IV 4.0	V 13.0	III 6.5	I 0.4					V 10.1
RUBU PUB	I 0.6	V 2.8	II 1.0	IV 3.6	III 2.5						I 0.0
RUBU STR											
RUME ALP											
SALI ARC											
SALI ATH									II 2.5		
SALI BAA											
SALI BAR						I 1.4	III 4.8				I 0.4
SALI BEB	I 0.4	I 0.2				I 0.2				III 1.0	
SALI CAN											
SALI DIS											
SALI DRU									II 2.5		
SALI FAR							I 0.8				
SALI GLA							I 0.7				I 0.0

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
SALI LUC											
SALI MEL											
SALI MYR						I 0.6	II 1.2	II 3.3	III 17.5		
SALI OCC											
SALI PED							I 1.2				
SALI PLA							I 1.7	II 6.7			
SALI PYR											I 0.1
SALI RET											
SALI SCO	II 0.3	II 1.5	II 0.3	I 1.0	I 0.3					III 4.0	I 0.1
SALI SPP							I 1.3				I 0.2
SALI STO											
SAMB RAC		I 0.2									
SAXI TRI											
SCHI PUR									II 1.0		
SCIR CAE											
SELA SEL											
SENE IND									III 0.5		
SENE PAU											
SENE TRI											
SHEP ARG											
SHEP CAN					I 0.3					V 8.5	I 0.1
SIBB PRO											
SILE ACA											
SMIL RAC	I 0.4			II 1.8	I 1.9						
SMIL STE									II 0.8		
SMIL TRI							III 1.2	IV 3.3	II 0.3		
SOLI CAN									III 0.5		
SOLI MUL											
SOLI NEM											
SOLI SPA											
SOLI SPP											
SORB SCO	III 1.4	I 0.2		II 3.0	I 0.3						III 0.9
SPHA ANG							I 3.3	II 26.0	II 3.0		
SPHA FUS							I 14.2	II 15.0			
SPHA GIR											
SPHA MAG											
SPHA NEM											
SPHA RUS							I 8.7				
SPHA TER								II 6.3			
SPHA WAR							III 6.7	II 16.0	II 2.5		
SPIR BET	II 2.4	V 2.2	III 1.0	II 1.8	II 0.7					III 0.5	I 0.4
SPIR ROM											
SPLA SPH											
STEL CAL											
STEL LOG									II 0.8		
STEL LON									II 0.3		
STEL MED											
STEN OCC					I 0.2						
STER TOM						II 2.0				III 1.0	I 0.1
STRE AMP	II 0.3	II 0.8		IV 6.2	III 1.2						III 1.6
STRE ROS				III 7.8							I 0.1

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
SYMP ALB											
TARA OFF									II 0.3		
TETR ANG											
TETR MNI											
TETR PEL	I 0.1										I 0.0
THAL OCC											
THAL VEN				I 0.2	I 0.3				V 5.0		
THAM SUB											
THUI ABI											
THUI REC								II 0.3			
TIAR TRI					I 0.8						
TIAR UNI				II 2.6	I 0.4						I 0.0
TINM AUS					I 0.1						
TOME NIT							V 9.7	IV 10.3	II 0.3		
TONI COE											
TORT NOR											
TORT RUR											
TRIS SPI											
TRIT EXS											I 0.0
TROL ALB											
USNE ALP	I 0.1			II 0.2	II 2.6						I 0.1
USNE CAV											
USNE GLA											
USNE SCA		II 1.7		II 0.5	I 0.7						I 0.8
USNE SOR	I 0.1	I 1.2		V 4.8	II 0.7	I 1.0					II 0.8
USNE SPP							I 2.5				I 0.2
USNE SUB	I 0.1	I 1.3		II 0.2	II 0.1						I 0.1
VACC CAE	I 2.0		II 0.3	I 0.6	II 1.8	IV 1.0	III 1.3			III 0.5	I 1.1
VACC MEM	V 17.0	I 1.0	V 1.8	III 1.8	II 3.1	III 4.8					IV 8.7
VACC MYR	V 12.8		III 2.0	II 0.6		III 1.6				III 3.0	II 1.9
VACC MYT	I 2.0										
VACC VIT	II 0.6	I 0.2	II 0.5	I 0.2	I 0.4	V 5.2	V 2.5	IV 2.0		V 4.0	IV 3.0
VALE DIO			II 0.3					II 0.3	III 2.0		
VALE SIT											
VERA ESC		I 0.2		II 1.2							III 0.9
VERO ALP											
VERO SER											
VIBU EDU	I 0.2	V 4.3	III 0.8	V 6.9	IV 2.3						
VICI AME									III 2.0	III 2.5	
VIOL ADU											
VIOL CAN					I 0.6						
VIOL NEP											
VIOL ORB				I 0.2		I 0.2	I 0.2				
VIOL PAL											
VIOL REN		I 0.2	III 0.5								
VIOL RUG					I 0.2						
VIOL SPP											

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ECOSYSTEMATIC UNITS	BU 2	BU 3	BU 4	BU 5	BU 6	BU 7	BU 8	BU 9	BU 10	BU 11	SA 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ZYGA ELE											

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ECOSYSTEMATIC UNITS SPECIES	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ABIE BAL											
ABIE LAS	V 8.9	V 15.7	III 1.9	III 4.0	IV 13.3	I 0.3					III 1.0
ACHI MIL	I 0.1						II 0.4	V 1.7	III 0.5	I 0.2	V 1.0
ACON DEL										IV 0.8	
ACTA RUB	I 0.1										
AGRO SCA											
AGRO TRA			I 0.1				I 0.4	IV 0.7		I 0.4	
ALEC SAR			I 0.3								
ALNU CRI	II 1.9		I 0.3			III 6.0					
ALNU TEN											
AMBL SER											
AMEL ALN											
ANAS HEL	I 0.1										
ANDR POL											
ANEM LIT									III 0.5		
ANEM PAR							I 0.3		III 0.5		
ANTE MED						II 0.3					
ANTE MIC											
ANTE NEG						II 0.3					
ANTE RAC						I 0.1					V 1.0
ANTE ROS											V 2.0
ARAL NUD											
ARCT RUB											
ARCT UVA						II 4.4			V 15.5		V 40.0
ARNI CHA							I 0.1				
ARNI COR	II 0.8		III 1.7	II 0.3	II 0.3	V 3.0	I 0.1				III 0.5
ARNI LAT	II 1.2	II 1.0	I 0.1		II 0.5	I 0.1				I 0.4	III 0.5
ARNI RYD	I 0.1		I 0.3								
ARTE NOR	II 0.3	II 0.3							III 0.5	V 7.4	V 5.5
ASTE CIL											
ASTE CON						II 3.6					
ASTE HES								II 1.3			
ASTE LAE	I 0.1										
ASTE PUN							I 0.1				
ASTE SIB									III 1.0		
ASTE SPP											
ASTE SUB								II 0.3			
ASTR AME											
ASTR STR									III 2.0		
ATHY FIL											
AULA PAL	I 0.1				II 3.3		V 15.3	IV 23.3		I 4.4	
BARB HAT											
BARB LYC		II 3.3									
BAZZ TRI	II 1.6	IV 25.0			II 3.3						
BETU GLA			II 1.9				V 17.4				III 0.5
BETU OCC											
BETU PAP											
BETU PUM	I 0.1										
BETU SPP											
BOTR VIR											

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PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
BRAC ALB										II 1.0	
BRAC CAM											
BRAC GRO										I 0.2	III 1.0
BRAC HYL											
BRAC LEI											
BRAC MIL											
BRAC SAL											
BRAC SPP											
BRAC STA											
BROM INE								II 0.3			
BRYO CAP	I 0.1										
BRYO FRE	I 0.6		I 1.0								
BRYO FUR											
BRYO FUS	I 0.6					I 0.1					
BRYO SPP											
BRYU PSE							I 0.1			I 0.2	
CALA CAN	II 0.7		I 0.5		II 0.3	I 0.3	I 0.4	IV 1.0			III 0.5
CALA INE											
CALA SPP							I 1.2				
CALA STR	I 0.1		I 0.1		II 0.3	III 0.6	I 0.1			I 0.4	
CALL GIG							I 0.3				
CAMP HIS											
CAMP LAS						I 0.1					
CAMP ROT											V 1.5
CAMP STE							I 0.1				
CARE ALB										I 0.2	
CARE AQU							V 11.1	II 1.3			
CARE BRU							I 0.8				
CARE CAP											
CARE CHO							I 0.1				
CARE COC											
CARE CON		II 0.3								I 0.2	
CARE DIA							I 0.1			I 0.2	
CARE DIS											
CARE GYN							III 1.1				
CARE MAC										I 1.0	
CARE MIC							II 1.8				
CARE NIG		II 2.0									
CARE PAP											
CARE PAU											
CARE PEN							II 0.9			I 0.2	
CARE PRA											
CARE ROS						I 0.1					
CARE ROT											
CARE SCI											
CARE SIC						I 0.1	I 0.1				
CARE SPP								II 4.3			
CARE TEN											
CARE TOL										II 0.4	
CARE VAG		II 0.3					II 1.1				

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
CASS TET		V 19.7									
CAST MIN						I 0.1	I 0.1				V 2.0
CAST OCC											V 1.5
CATO NIG							I 0.1				
CERA ARV										I 0.2	
CERA BEE										I 0.2	
CERA PUR										I 3.8	
CERA SPP											
CETR ARE											
CETR CHL											
CETR CUC							I 0.1			I 0.2	
CETR ERI											
CETR HAL	II 0.6		I 0.3			I 0.1					III 1.5
CETR ISL	I 0.1	II 0.3	I 0.1								
CETR MER											
CETR NIV									III 2.5	I 0.2	
CETR PIN	II 0.6		I 0.3			I 0.1					
CLAD CAP	I 0.1										
CLAD CAR											
CLAD CEN	I 0.1				III 0.5	I 0.1	I 0.1				
CLAD CHL			II 0.3		IV 0.8		I 0.1				III 1.0
CLAD COC			I 0.1								III 1.5
CLAD COI											
CLAD CON	I 0.1					II 0.2					
CLAD COR	I 0.1	II 0.3	II 0.4		II 0.3	I 0.1	I 0.1			I 0.2	III 1.0
CLAD CRI	I 0.1		I 0.1			I 0.1					
CLAD DEF	I 0.1		I 0.3		II 0.3						III 1.0
CLAD ECM	II 2.0	V 4.7	II 0.4	II 0.3	III 0.5		I 0.1			I 0.2	
CLAD FIM			I 0.1								
CLAD FUS											
CLAD GON											III 0.5
CLAD GRA	II 0.2		I 0.3			I 0.1	I 0.1				III 2.0
CLAD MIT	III 0.4	II 0.3	III 0.9	III 0.5		II 0.3	I 0.1			I 0.2	III 1.0
CLAD PHY	I 0.1										
CLAD PLE											
CLAD PYX			I 0.1								III 0.5
CLAD RAN			I 0.1	II 0.3		I 0.1					
CLAD SPP											
CLAD SQU		II 0.3	I 0.1								
CLAD STE											
CLAD UNC			I 0.1								
CLEM OCC											
CLIM DEN							I 0.4				
CORA TRI	I 0.1										
CORN CAN	V 2.9		V 5.9	V 4.8	IV 1.5	IV 3.7	I 0.3				V 4.5
CORN STO											
CORY COR											
CYPR PAS											
DACT ARC											
DANT CAL									III 0.5		

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
DELP GLA	I 0.1						II 0.8	II 0.3		I 0.2	
DESC CES							IV 1.8	IV 13.3		I 0.4	
DICR ACU						I 0.1					
DICR BRE		II 7.3				I 0.1					
DICR FLA	I 0.1										
DICR FRA											
DICR FUS	II 0.7		I 0.1		II 3.5	III 0.5					
DICR POL	III 2.7		I 1.2	III 0.5		I 0.1	I 0.3				
DICR SCO	II 7.7	V 14.3	III 1.8	III 1.0	IV 1.5	I 0.1	I 0.6			I 0.2	
DICR SPP										I 5.6	
DICR UND							I 0.1				
DISP TRA											
DRAB AUR											
DREP REV							II 1.4				
DREP UNC	I 0.2						I 0.1			I 1.0	
DRYA OCT									III 9.5	I 4.2	
DRYO CAR											
ELYM INN	II 0.8		I 0.1		II 0.3	V 3.6	I 0.3	II 0.7	V 3.5		V 6.0
EMPE NIG	III 1.3		III 2.2		III 1.3	I 0.9					
EPIL ANG	II 0.8		II 0.6		II 0.5	IV 3.3	II 0.4	IV 1.3	III 0.5		V 2.5
EPIL CIL											
EPIL LAT										II 0.8	
EPIL PAL							I 0.1				
EQUI ARV	I 0.1			II 0.3	III 1.5	I 0.1	I 0.2			I 2.4	
EQUI HYE							I 0.1				
EQUI PRA	II 3.1		I 0.1				I 0.1				
EQUI SCI					IV 1.0		I 0.3			II 0.4	
EQUI SYL			II 0.3		III 1.3		I 0.1				
ERIG HUM										I 0.4	
ERIG PER						I 0.1				II 0.4	V 2.0
ERIG SPP	I 0.6										
ERIO VAG											
ERIO VIR							I 0.1				
EURH PUL					II 0.3						III 1.5
EVER MES											
FEST SAX											III 0.5
FRAG VIR	II 0.7				II 0.3		I 0.1	IV 1.0			V 1.0
GALI BOR	I 0.1					I 0.1	II 0.4	IV 1.0	III 0.5		
GALI LAB							I 0.1				
GALI TRI	I 0.1						II 0.5				
GAUL HIS				II 0.3							
GENT AMA											V 1.0
GENT CAL									III 0.5		
GENT GLA		IV 0.7									
GENT PRO										I 0.2	
GENT PRP									III 0.5	II 0.6	
GEOC LIV						I 0.1				I 0.2	
GEOL LIV											

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
GERA RIC											
GERA VIS											
GEUM ALE	I 0.1						I 0.6				
GEUM RIV							I 0.1				
GEUM SPP											
GEUM TRI							I 1.8	IV 8.3			
GLYC STR											
GOOD OBL											
GYMN DRY			I 0.1								
HABA ORB											
HABE HYP											III 0.5
HABE OBT											
HABE VIR									III 0.5		
HALE DEF											
HEDY ALP						I 0.1			V 1.0	I 0.4	
HEDY SUL											
HELO BLA											
HERA LAN	II 0.2										
HIER ODO							I 0.1				
HIER TRI		II 1.0									
HIER UMB						I 0.1	I 0.1				
HYLO SPL	IV 22.6		V 16.5	V 14.3	V 22.0	III 4.0	I 2.8			I 4.4	
HYPN PRA											
HYPO AUS											
HYPO BIT											
HYPO ENT						I 0.1					
HYPO PHY	II 1.1		I 0.3			I 0.1					
HYPO TUB											
ICMA ERI											
JAME AUT											
JUNC BAL											
JUNC DRU		II 0.7									
JUNI COM						I 1.0					
KALM POL							I 0.3				
KOBR MYO						I 0.1					
LARI LAR											
LATH OCH					II 0.5	II 0.6		II 1.0			
LATH VEN											
LECA RUB										I 0.2	
LEDU GRO	II 1.9		IV 19.1	V 25.0		I 1.0					III 0.5
LEPI REP											
LEPT PYR											
LETH VUL											
LILI PHI											
LINN BOR	IV 3.3		III 1.7	V 1.0	III 1.0	V 3.3	I 0.3				III 7.5
LIST BOR			I 0.1								

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
LIST COR	I 0.1				II 0.3						
LOBA LIN		II 0.3									
LOBA PUL											
LONI DIO											
LONI INV	II 0.8		I 0.3		II 3.8						
LOPH BIN							I 0.1				
LOPH LON											
LOPH POR			I 0.1								
LOPH VEN											
LUPI SER	I 2.1	II 3.0									
LUZU PAR		IV 0.7				I 0.1	I 0.1	II 0.3		II 0.6	
LUZU PIP										I 0.2	
LYCO ANN	III 0.5		IV 1.0								
LYCO CLA											III 0.5
LYCO COM											III 2.0
MAIA CAN	II 0.3					III 0.6					
MELA LIN											
MELA UNE											
MENY TRI							I 0.3				
MENZ FER	II 3.0		I 0.5								III 0.5
MERT PAN	II 0.2		I 0.1		II 1.0	III 0.7	II 0.9	II 0.7			
MINU BIF									III 0.5		
MINU OBT										I 0.4	
MITE NUD	II 1.6				IV 0.8		III 0.8				
MNIU AFF							I 0.1				
MNIU ARI											
MNIU SPI											
MOEH LAT										I 0.2	
MONE UNI	I 0.1										
MYLI ANO											
MYOS ALP										IV 1.0	
NEPH BEL											
NEPH EXP										I 0.2	
NEPH PAR											
OPLO HOR											
ORTH SEC	V 1.1		II 0.7		IV 1.3	II 0.4	I 0.1				
ORYZ ASP											
ORYZ EXI											
ORYZ SPE											
OSMO CHI	I 0.2										
OSMO DEP											
OSMO PUR											
OXYC MIC							I 0.3				
OXYR DIG		II 0.7								I 1.8	
OXYT DEF										I 0.2	
OXYT POD									III 0.5	I 0.2	
OXYT SPL									V 3.5		

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
PALU SQU							II 2 6				
PARM ALE											
PARM AMB	II 1.2		I 0.3								
PARM CHL									III 0 5		
PARM HYP	II 2 3		I 0.3			I 0.1					
PARM SUL	I 0.1					I 0.1					
PARN FIM							I 0 1				
PARN PAL											
PEDI BRA		II 0.3								II 0.4	
PEDI CAP										I 0 2	
PEDI LAB											
PEDI PAR											
PEDI SPP	I 0.1						I 0.1				
PELT APH	IV 3.2		IV 1 5	IV 1.8	IV 3.8	III 1.8	II 0.6			II 0.4	III 0.5
PELT CAN											III 1.0
PELT MAL	II 0.4	II 0.3	II 0.6	III 1.0	III 0.8	III 1.0	II 0 4	II 0 7		II 0.6	V 6.0
PELT POL											
PENS PRO							I 0.1				
PETA PAL	II 1.0		III 0.5	II 0.3	IV 1.5	I 0.1	I 0.2				
PETA SAG		II 0.3					II 0 8	II 0.3		I 1.4	
PHLE COM							I 0.1	IV 1.3		II 0.6	
PHYL EMP	II 2.4	V 8.0									
PHYS ADS											
PICE ENE	II 8.8		I 1.1		III 18.8	II 0.3	I 0.6				V 1.5
PICE ENG	III 6.1	IV 10.3			II 2.0						
PICE GLA	II 4.7				II 11.8	I 0.1					
PICE MAR			III 5.0	V 31.8		I 0.1	II 0.6				
PINU BAN											
PINU CON	IV 5.0		V 40.4	V 3.3	II 0 3	V 37 6	I 0 1				V 6.0
PLAD MED											
PLAG ARI										I 0.2	
PLAG CUS											
PLAG DRU											
PLAG ELL							II 1.4				
PLAG LAE											
PLAG MED								IV 2.3			
PLAT GLA						I 0 1					
PLEU SCH	V 22.4		V 33.5	V 55.0	V 14.8	IV 15.9	I 0.5			I 2 8	
POA ALP										III 1.8	
POA COM							I 0 1				
POA PAL											
POA PRA							I 0.2				
POHL NUT	I 0.3		I 0.1		II 0.8	III 0.7	I 0.1				
POLE PUL							III 1.2	IV 3.7			
POLE SPP		II 0.3									
POLY COM											
POLY JUN	III 0.6	II 1.0	III 1.0	II 0.3	III 2.5	III 1 1	II 1.4	II 0.7		II 1.8	III 0.5
POLY PIL											III 3.5
POLY STR											
POLY VIV	I 0.1	II 0.3			II 0.3		III 0.4			IV 2 0	
POPU BAL						II 0.4			III 5.0		III 0.5

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
POPU TRE											V 30.0
POTE DIV		II 0.3								IV 2.2	
POTE GRA											
POTE HOO									III 1.0	I 0.4	
POTE PAL							I 0.3				
PRUN PEN											
PRUN VIR											
PTIL CIL											
PTIL CRI	IV 15.0		V 20.5	V 18.8	V 7.5	III 6.0					
PTIL PUL	I 0.1					I 0.1					
PYLA POL											
PYRO ASA	II 0.3		I 0.6		II 0.3	III 3.1					
PYRO CHL	I 0.1		I 0.1		II 0.3		I 0.1				
PYRO MIN											
RAMA FAS	I 0.1										
RAMA THR	I 0.1										
RANU OCC										I 0.2	
RHIZ GRA											
RHIZ PSE											
RHOD ALB	V 11.7		I 0.5								III 1.0
RHYT TRI											
RIBE AME											
RIBE HIR											
RIBE INE											
RIBE LAC	II 0.8										
RIBE OXY	II 0.2										
RIBE SPP											
RIBE TRI											
ROSA ACI	II 0.4		I 0.1	III 0.8	II 0.8	IV 3.0			V 3.5		
RUBU ACU											
RUBU ARC							V 1.7	IV 1.3			
RUBU CHA								II 0.3			
RUBU IDA						I 0.7					
RUBU PAA											
RUBU PAR											
RUBU PED	V 4.4		V 5.8	IV 1.0	II 0.3						
RUBU PUB	I 0.6		I 0.3		III 0.5						
RUBU STR											
RUME ALP								II 0.3		II 0.8	
SALI ARC		II 3.3								I 1.0	
SALI ATH							I 4.5				
SALI BAA							II 4.0			I 6.0	
SALI BAR							II 7.2	II 11.3		I 1.0	III 3.5
SALI BEB			I 0.2								
SALI CAN											
SALI DIS											
SALI DRU											
SALI FAR											
SALI GLA					II 0.5		II 4.9	IV 19.0		III 4.0	III 1.0

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SALI LUC											
SALI MEL											
SALI MYR	I 0.8						I 3.4	II 1.3			
SALI OCC											
SALI PED							I 1.3				
SALI PLA							I 1.3				
SALI PYR			I 0.5								
SALI RET										I 14.0	
SALI SCO	I 0.1		I 0.2			I 0.6					III 1.5
SALI SPP	I 0.2					I 0.1	I 4.2				
SALI STO			I 0.2								
SAMB RAC											
SAXI TRI									V 2.5	I 0.4	
SCHI PUR											
SCIR CAE							I 1.5				
SELA SEL							I 0.1				
SENE IND							I 0.3				
SENE PAU								II 0.7			
SENE TRI							II 0.4	II 1.0		I 0.8	III 0.5
SHEP ARG											
SHEP CAN					II 1.0	I 0.7			III 2.5		
SIBB PRO		II 0.3								III 1.4	
SILE ACA										I 1.0	
SMIL RAC	I 0.1										
SMIL STE								II 0.3			
SMIL TRI							I 0.1				
SOLI CAN							I 0.3				
SOLI MUL										I 0.4	V 4.0
SOLI NEM									III 0.5	I 0.2	
SOLI SPA									III 0.5		
SOLI SPP						I 0.1					
SORB SCO	II 0.2		I 0.5								
SPHA ANG							I 9.3				
SPHA FUS											
SPHA GIR			I 0.3								
SPHA MAG											
SPHA NEM				II 0.3							
SPHA RUS											
SPHA TER											
SPHA WAR							V 28.4	II 0.7			
SPIR BET						III 2.0					
SPIR ROM							I 0.1				
SPLA SPH											
STEL CAL							I 0.1				
STEL LOG							I 0.1	II 0.7			
STEL LON								II 0.3			
STEL MED											
STEN OCC											
STER TOM	I 0.2	II 0.3	I 0.1	II 0.3		I 0.4			III 0.5	III 1.8	III 1.0
STRE AMP	III 0.7		II 0.8								
STRE ROS											

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SYMP ALB											
TARA OFF								II 0.3			
TETR ANG											
TETR MNI											
TETR PEL											
THAL OCC											
THAL VEN							I 0.3	II 1.0		II 2.0	
THAM SUB									III 1.0	I 0.4	
THUI ABI											III 1.0
THUI REC											
TIAR TRI											
TIAR UNI	I 0.2		I 0.1								
TIMM AUS											
TOME NIT					II 0.5		V 16.2	IV 7.0			
TONI COE		II 1.0									
TORT NOR										I 0.2	
TORT RUR									III 1.5	I 0.2	
TRIS SPI							I 0.3			III 0.6	V 2.0
TRIT EXS											
TROL ALB										II 1.4	
USNE ALP	I 0.1					I 0.1					
USNE CAV											
USNE GLA											
USNE SCA	I 1.7		I 0.2								
USNE SOR	II 0.6					I 0.1					
USNE SPP											
USNE SUB	I 0.1					I 0.1					
VACC CAE		II 0.3	II 0.5	II 0.3	II 0.3	II 0.7	I 0.6			I 0.8	III 0.5
VACC MEM	V 10.7	II 3.0	V 11.3	IV 5.8	III 6.0	II 0.6					III 1.0
VACC MYR			I 0.3	II 0.5		I 0.1					
VACC MYT											
VACC VIT	IV 0.7		IV 2.5	V 5.0	II 0.3	III 4.3	I 0.1				III 0.5
VALE DIO					II 0.5		III 1.3	II 3.3		II 2.0	
VALE SIT	I 1.1									II 2.0	
VERA ESC	II 0.8										
VERO ALP							I 0.3	II 0.3		II 0.6	
VERO SER								II 0.3			
VIBU EDU	I 0.6		I 0.3			III 0.9					
VICI AME											
VIOL ADU											
VIOL CAN											
VIOL NEP											
VIOL ORB	I 0.1						I 0.2				
VIOL PAL							I 0.2				
VIOL REN						I 0.1	I 0.1				
VIOL RUG											
VIOL SPP											

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ECOSYSTEMATIC UNITS	SA 2	SA 3	SA 4	SA 5	SA 6	SA 7	SA 8	SA 9	SA 10	A 1	MO 1
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE										
ZYGA ELE									III 0.5		

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
ABIE BAL	
ABIE LAS	
ACHI MIL	III 0.9
ACON DEL	
ACTA RUB	II 0.4
AGRO SCA	
AGRO TRA	
ALEC SAR	
ALNU CRI	
ALNU TEN	
AMBL SER	I 0.0
AMEL ALN	III 1.4
ANAS HEL	
ANDR POL	
ANEM LIT	
ANEM PAR	
ANTE MED	
ANTE MIC	
ANTE NEG	
ANTE RAC	
ANTE ROS	
ARAL NUD	
ARCT RUB	
ARCT UVA	
ARNI CHA	
ARNI COR	
ARNI LAT	
ARNI RYD	
ARTE NOR	
ASTE CIL	V 1.5
ASTE CON	IV 4.4
ASTE HES	
ASTE LAE	
ASTE PUN	
ASTE SIB	
ASTE SPP	I 0.6
ASTE SUB	
ASTR AME	
ASTR STR	
ATHY FIL	
AULA PAL	
BARB HAT	
BARB LYC	
BAZZ TRI	
BETU GLA	
BETU OCC	
BETU PAP	
BETU PUM	
BETU SPP	
BOTR VIR	

University of Alberta

ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
BRAC ALB	
BRAC CAM	
BRAC GRO	
BRAC HYL	
BRAC LEI	
BRAC MIL	
BRAC SAL	III 1.5
BRAC SPP	I 0.0
BRAC STA	
BROM INE	
BRYO CAP	
BRYO FRE	
BRYO FUR	
BRYO FUS	I 0.7
BRYO SPP	
BRYU PSE	
CALA CAN	I 2.6
CALA INE	I 1.4
CALA SPP	
CALA STR	I 0.7
CALL GIG	
CAMP HIS	I 0.0
CAMP LAS	
CAMP ROT	I 0.1
CAMP STE	
CARE ALB	
CARE AQU	
CARE BRU	
CARE CAP	
CARE CHO	
CARE COC	
CARE CON	
CARE DIA	
CARE DIS	
CARE GYN	
CARE MAC	
CARE MIC	
CARE NIG	
CARE PAP	
CARE PAU	
CARE PEN	
CARE PRA	
CARE ROS	
CARE ROT	
CARE SCI	
CARE SIC	
CARE SPP	
CARE TEN	
CARE TOL	
CARE VAG	

University of Alberta

ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
CASS TET	
CAST MIN	I 0.1
CAST OCC	
CATO NIG	
CERA ARV	I 0.1
CERA BEE	
CERA PUR	
CERA SPP	
CETR ARE	
CETR CHL	
CETR CUC	
CETR ERI	
CETR HAL	
CETR ISL	
CETR MER	
CETR NIV	
CETR PIN	
CLAD CAP	
CLAD CAR	
CLAD CEN	
CLAD CHL	
CLAD COC	
CLAD COI	
CLAD CON	
CLAD COR	
CLAD CRI	
CLAD DEF	
CLAD ECM	
CLAD FIM	
CLAD FUS	
CLAD GON	
CLAD GRA	
CLAD MIT	
CLAD PHY	
CLAD PLE	
CLAD PYX	
CLAD RAN	
CLAD SPP	
CLAD SQU	
CLAD STE	
CLAD UNC	
CLEM OCC	I 0.0
CLIM DEN	
CORA TRI	
CORN CAN	II 1.1
CORN STO	
CORY COR	
CYPR PAS	
DACT ARC	
DANT CAL	

University of Alberta

ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
DELP GLA	IV 2.7
DESC CES	
DICR ACU	
DICR BRE	
DICR FLA	
DICR FRA	
DICR FUS	
DICR POL	
DICR SCO	
DICR SPP	
DICR UND	
DISP TRA	I 0.3
DRAB AUR	I 0.1
DREP REV	
DREP UNC	I 0.1
DRYA OCT	
DRYO CAR	
ELYM INN	IV 10.0
EMPE NIG	
EPIL ANG	V 9.8
EPIL CIL	
EPIL LAT	
EPIL PAL	
EQUI ARV	I 0.1
EQUI HYE	
EQUI PRA	
EQUI SCI	
EQUI SYL	
ERIG HUM	
ERIG PER	
ERIG SPP	
ERIO VAG	
ERIO VIR	
EURH PUL	III 2.0
EVER MES	
FEST SAX	
FRAG VIR	V 3.3
GALI BOR	IV 0.9
GALI LAB	
GALI TRI	
GAUL HIS	
GENT AMA	I 0.1
GENT CAL	
GENT GLA	
GENT PRO	
GENT PRP	
GEOC LIV	
GEOL LIV	

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ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
GERA RIC	III 3.0
GERA VIS	
GEUM ALE	
GEUM RIV	
GEUM SPP	
GEUM TRI	
GLYC STR	
GOOD OBL	
GYMN DRY	
HABA ORB	
HABE HYP	
HABE OBT	
HABE VIR	
HALE DEF	
HEDY ALP	II 1.0
HEDY SUL	
HELO BLA	
HERA LAN	III 3.6
HIER ODO	
HIER TRI	
HIER UMB	
HYLO SPL	I 0.3
HYPN PRA	
HYPO AUS	
HYPO BIT	
HYPO ENT	
HYPO PHY	
HYPO TUB	
ICMA ERI	
JAME AUT	
JUNC BAL	
JUNC DRU	
JUNI COM	
KALM POL	
KOBR MYO	
LARI LAR	
LATH OCH	V 2.8
LATH VEN	I 0.4
LECA RUB	
LEDU GRO	I 0.1
LEPI REP	
LEPT PYR	
LETH VUL	
LILI PHI	
LINN BOR	II 1.1
LIST BOR	

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ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
LIST COR	
LOBA LIN	
LOBA PUL	
LONI DIO	I 0.7
LONI INV	I 2.1
LOPH BIN	
LOPH LON	
LOPH POR	
LOPH VEN	
LUPI SER	
LUZU PAR	
LUZU PIP	
LYCO ANN	
LYCO CLA	
LYCO COM	
MAIA CAN	I 0.1
MELA LIN	
MELA UNE	
MENY TRI	
MENZ FER	
MERT PAN	III 4.6
MINU BIF	
MINU OBT	
MITE NUD	II 0.3
MNIU AFF	
MNIU ARI	
MNIU SPI	
MOEH LAT	
MONE UNI	
MYLI ANO	
MYOS ALP	
NEPH BEL	
NEPH EXP	
NEPH PAR	
OPLO HOR	
ORTH SEC	
ORYZ ASP	
ORYZ EXI	
ORYZ SPE	
OSMO CHI	
OSMO DEP	
OSMO PUR	
OXYC MIC	
OXYR DIG	
OXYT DEF	
OXYT POD	
OXYT SPL	

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ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
PALU SQU	
PARM ALE	
PARM AMB	
PARM CHL	
PARM HYP	
PARM SUL	
PARN FIM	
PARN PAL	
PEDI BRA	
PEDI CAP	
PEDI LAB	
PEDI PAR	
PEDI SPP	
PELT APH	
PELT CAN	
PELT MAL	
PELT POL	
PENS PRO	
PETA PAL	III 0.9
PETA SAG	
PHLE COM	
PHYL EMP	
PHYS ADS	
PICE ENE	
PICE ENG	
PICE GLA	III 1.1
PICE MAR	I 0.1
PINU BAN	
PINU CON	
PLAD MED	
PLAG ARI	
PLAG CUS	
PLAG DRU	
PLAG ELL	I 0.1
PLAG LAE	
PLAG MED	I 0.1
PLAT GLA	
PLEU SCH	II 0.7
POA ALP	
POA COM	
POA PAL	
POA PRA	
POHL NUT	I 0.1
POLE PUL	
POLE SPP	
POLY COM	
POLY JUN	I 0.1
POLY PIL	
POLY STR	
POLY VIV	
POPU BAL	II 1.9

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ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
POPU TRE	V 51.3
POTE DIV	
POTE GRA	
POTE HOO	
POTE PAL	
PRUN PEN	
PRUN VIR	
PTIL CIL	
PTIL CRI	II 0.3
PTIL PUL	
PYLA POL	I 0.0
PYRO ASA	IV 1.5
PYRO CHL	
PYRO MIN	
RAMA FAS	
RAMA THR	
RANU OCC	
RHIZ GRA	
RHIZ PSE	
RHOD ALB	
RHYT TRI	
RIBE AME	
RIBE HIR	
RIBE INE	I 0.3
RIBE LAC	
RIBE OXY	
RIBE SPP	
RIBE TRI	I 0.3
ROSA ACI	V 3.7
RUBU ACU	
RUBU ARC	I 0.1
RUBU CHA	
RUBU IDA	
RUBU PAA	I 1.0
RUBU PAR	
RUBU PED	
RUBU PUB	I 0.7
RUBU STR	
RUME ALP	
SALI ARC	I 2.1
SALI ATH	
SALI BAA	
SALI BAR	
SALI BEB	I 0.3
SALI CAN	
SALI DIS	
SALI DRU	
SALI FAR	
SALI GLA	II 1.5

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SUMMARY VEGETATION TABLE

RESOURCE INVENTORY

EDMONTON, ALBERTA

PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	MO 2
SALI LUC	
SALI MEL	
SALI MYR	
SALI OCC	
SALI PED	
SALI PLA	
SALI PYR	
SALI RET	
SALI SCO	
SALI SPP	I 1.0
SALI STO	
SAMB RAC	
SAXI TRI	
SCHI PUR	
SCIR CAE	
SELA SEL	
SENE IND	
SENE PAU	
SENE TRI	
SHEP ARG	
SHEP CAN	III 1.0
SIBB PRO	
SILE ACA	
SMIL RAC	
SMIL STE	III 1.5
SMIL TRI	
SOLI CAN	
SOLI MUL	
SOLI NEM	
SOLI SPA	
SOLI SPP	
SORB SCO	
SPHA ANG	
SPHA FUS	
SPHA GIR	
SPHA MAG	
SPHA NEM	
SPHA RUS	
SPHA TER	
SPHA WAR	
SPIR BET	I 0.0
SPIR ROM	
SPLA SPH	
STEL CAL	
STEL LOG	
STEL LON	I 0.3
STEL MED	
STEN OCC	
STER TOM	
STRE AMP	
STRE ROS	

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PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE

ECOSYSTEMATIC UNITS SPECIES	MO 2
SYMP ALB	
TARA OFF	I 0.1
TETR ANG	
TETR MNI	
TETR PEL	
THAL OCC	I 1.1
THAL VEN	IV 3.2
THAM SUB	
THUI ABI	
THUI REC	
TIAR TRI	
TIAR UNI	
TIMM AUS	
TOME NIT	
TONI COE	
TORT NOR	
TORT RUR	I 0.0
TRIS SPI	
TRIT EXS	
TROL ALB	
USNE ALP	
USNE CAV	
USNE GLA	
USNE SCA	
USNE SOR	I 0.7
USNE SPP	
USNE SUB	
VACC CAE	II 1.3
VACC MEM	
VACC MYR	I 0.1
VACC MYT	
VACC VIT	
VALE DIO	I 0.3
VALE SIT	
VERA ESC	
VERO ALP	
VERO SER	
VIBU EDU	I 0.1
VICI AME	V 1.6
VIOL ADU	I 0.1
VIOL CAN	II 0.3
VIOL NEP	
VIOL ORB	
VIOL PAL	
VIOL REN	
VIOL RUG	
VIOL SPP	I 0.1

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SUMMARY VEGETATION TABLE

ECOSYSTEMATIC UNITS	MO 2
SPECIES	PRESENCE CLASS AND MEAN SPECIES SIGNIFICANCE
ZYGA ELE	

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Volume

3

Integrated Resource Inventory

Alberta
ENERGY AND
NATURAL RESOURCES
Resource Evaluation
and Planning

INTEGRATED RESOURCE INVENTORY
OF DEEP BASIN STUDY AREA (NTS 83L)
VOLUME III

INTEGRATED RESOURCE INVENTORY OF THE DEEP BASIN AREA (NTS 83L)

VOLUME III

NATURAL RESOURCES OF THE STUDY AREA

1984
Edmonton

Resource Inventory and Appraisal
Resource Evaluation and Planning Division
Alberta Energy and Natural Resources

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E Climatic Parameters for Specific Stations within the Deep Basin Area 45

1. BEDROCK GEOLOGY

The study area is underlain by a succession of marine and non-marine sedimentary strata ranging in age from Triassic to Tertiary (Figure 154). The majority of these bedrock units are exposed across the map area in two very distinct geological environments. The first is referred to as the Rocky Mountain orogeny belt and consists of sedimentary rocks displayed in a series of homoclinal southwest dipping imbricate thrust sheets (Barnes, 1976). The second environment, which covers the majority of the study, is referred to as the Western Alberta Plains and Wapiti Plain. In this environment, Upper Cretceous to Lower Tertiary rocks form a broad northwest trending asymetric syncline (Allen and Rutherford, 1934).

Structural features within the foothills and mountains are much more pronounced than those associated with the plains. In the study, two structural groupings were recognized within the Rocky Mountain orogenic belt - the Front Ranges and the Foothills. Often these units are not easily defined or separable from each other, however, there are characteristic rock types and patterns of folding and faulting within each group.

The structure of the Front Ranges consists of a series of overthrust sheets lying between south-westerly dipping faults which have sliced the limestone formations into a number of blocks (Holland, 1976). Subsequent erosion of these complex blocks has produced the numerous parallel ranges which constitute the Front Ranges, with each range representing a major thurst sheet which has been displaced to the northeast resulting in a steep northeast facing scarp (Alberta Wilderness Association, 1973). This general structure of large thrust sheets is much more evident south of the present study and is complicated by the presence of numerous smaller faults and folds formed prior and subsequent to the major faulting. This complexity of folding and faulting has produced numerous anticlines and synclines. Late Pleistocene cirque glaciation has accentuated the sharpness of the topography of the east and northeast facing scarps.

The boundary between the Foothills and the Front Ranges lies along a structural line which traces the easternmost major fault that thrusts Palaeozoic over Mesozoic formations. The eastern boundary of the Foothills is depicted through a series of southwesterly dipping "en echelon" thrust faults which separate strongly folded and faulted sedimentary formations from flat-lying or gently dipping formations to the east.

The intensity of structural deformation becomes less well defined near the margin of the foothills-plains (Holland, 1976). As a consequence it is possible to divide the foothills into the inner foothills, which are adjacent to the mountains, and the outer foothills which fringe the plains. The inner foothills are higher and more rugged than the outer foothills which have a more moderate relief and subdued topography. The inner subregion is composed of tightly folded Cretaceous rocks (Irish, 1965).

The Western Alberta and Wapiti Plains, which are located to the northeast of the foothills belt are underlain by a thick succession of interbedded sandstone, siltstone, shales and mudstones of Late Cretaceousto Tertiary age. The regional structure of these strata is part of a shallow syncline referred to as the Alberta Syncline, the axis of which trends in a northwest direction. Strata on the northeast limb of the syncline dip to the southwest (less than 3 degrees) exposing successively older beds towards the northest. On the southwest limb, the strata dip to the northeast (5° to 15°) abutting against the complex folded and faulted Cretaceous beds marking the eastern margin of the foothills.

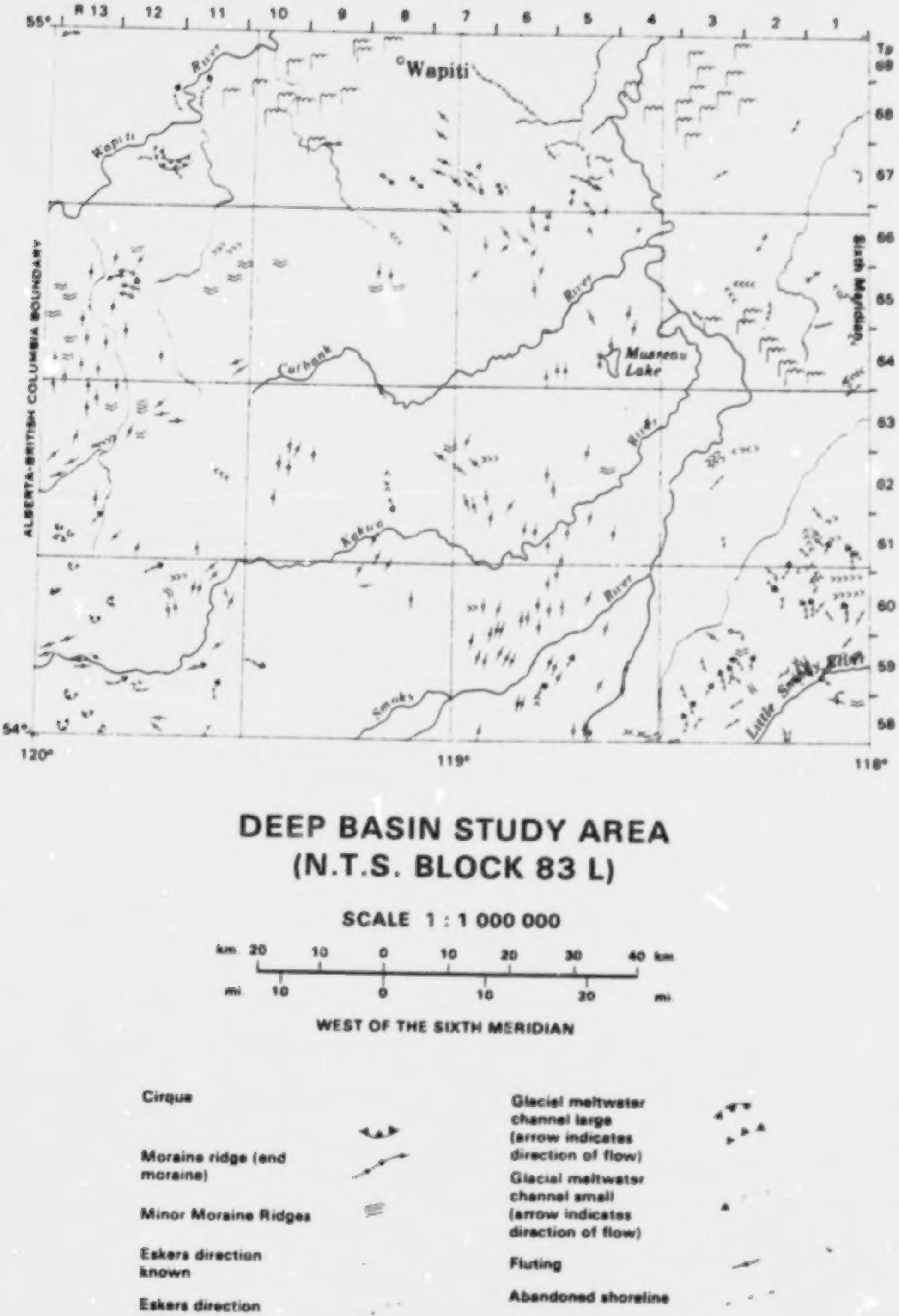
The bedrock strata can be divided into two units of simlar lithology. The older beds underlying the Wapiti Plains in the northeast consists of thinly bedded, non-marine, bentonitic sandstones and shales of the Wapiti Formation of Late Cretaceous age. This formation is overlain by Scollard Member of the Paskapoo Formation which is a marker between Wapiti equivalent and Paskapoo equivalent strata. It is largely characterized by its higher bentonitic content and thus relatively prone to failure.

The second bedrock unit is the younger Paskapoo Formation which consists of thicker calcareous sandstones interbedded with siltstone and shale of early Tertiary age (Barnes, 1976). This formation is thickest adjacent to the disturbed belt of the foothills where the Upper Cretaceous-Tertiary succession reverses dip (from southwest to 10 to 15 degrees northeast), thereby exposing the Cretaceous strata along a series of cuesta-like ridges that mark the edge of the folded belt.

2. QUATERNARY HISTORY

The Deep Basin area was covered by ice sheets during the Late Wisconsin period (20 000 to 7 000 BP), although some peaks such as Mount May (2 449 m) are thought to have extended above the ice sheets, and hence escaped this glaciation. Large erratics composed of quartzite, limestone and dolomite are found on the tops of many ridges up to 2 165 m (Irish, 1965). In addition, a large upland area of Tertiary gravels east of the Simonette River is thought to have escaped major glaciation. The landscape has since been modified by post-glacial erosion and deposition. This has resulted in a mantle of unconsolidated morainal materials covering much of the present-day Wapiti and Western Alberta Plains and the lower slopes of the Rocky Mountain Foothills and Rocky Mountains. Figure 155 illustrates the glacial and post glacial features of the study area. These include cirques, flutings, abandoned shorelines, eskers, glacial meltwater channels and dunes.

During the Late Wisconsin period, two major ice sheets were responsible for the sculpturing of the landscape; the Laurentide Ice Sheet which originated in the Keewatin District of the Northwest Territories and moved across the Interior Plains from the northeast. The Cordilleran Glacier Complex which originated to the west and southwest of the study area flowed northeast across the Western Cordilleran onto the Western Alberta Plain. The Laurentide ice is thought to have overridden Cordilleran ice in the area where the sheets met. The two ice sheets coalesced and flowed in a southeasterly direction along the eastern edge of the Rocky Mountain Foothills (Prest, 1976).


55°
R 13
12
11
10
9
8
7
6
5
4
3
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69
68
67
66
65
64
63
62
61
60
59
58
Wapiti
Wapiti
River
Cutbank
River
Musreau Lake
Kakwa
River
Smoky
River
Little Smoky River
ALBERTA-BRITISH COLUMBIA BOUNDARY
Sixth Meridian
54°
120°
119°
118°
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
SCALE 1 : 1 000 000
km 20 10 0 10 20 30 40 km
mi 10 0 10 20 mi
WEST OF THE SIXTH MERIDIAN
Cirque
Moraine ridge (end moraine)
Minor Moraine Ridges
Eskers direction known
Eskers direction unknown
Glacial meltwater channel large (arrow indicates direction of flow)
Glacial meltwater channel small (arrow indicates direction of flow)
Fluting
Abandoned shoreline
Dunes inactive

Figure 155: Glacial and Post Glacial Features

Erosion by the Cordilleran ice was limited to smoothing and rounding of existing peaks and ridges without effectively reducing relief. The erosiveness of the ice would have been much greater if the ice had been moving in a southwesterly direction against the scarps (Irish, 1965). Subsequent Late Pleistocene cirque glaciation further sculptured the landscape, especially on north and northeast exposures where jagged peaks, cirques and aretes predominate.

During the period of deglaciation the Laurentide ice retreated generally to the northeast, while Cordilleran ice dispersed largely by melting and stagnation of the ice masses as a whole (Nasmith, 1962). The number of advances and re-advances of both ice sheets in the area is hard to ascertain due to local ice front fluctuations during retreat stages, and active post-glacial erosion and deposition.

Major glaciofluvial terraces border the Smoky, Kakwa, Wapiti and Narraway Rivers and Sheep and Copton Creeks as a result of post-glacial erosion and deposition. These river valleys represented major outlets for glacial meltwaters during the retreat and stagnation of Cordilleran ice sheets.

Glacial Lake Peace-Bessborough (Mathews, 1976; St. Onge, 1972) was formed over most of the Wapiti Plains as the Laurentide ice sheet retreated to the northeast. The sediment load carried by glacial meltwaters from the retreating Cordilleran ice sheets resulted in the formation of numerous delta complexes within the lake. This, combined with slow but gradual retreat of lake levels from a maximum elevation of 850 m, has resulted in thin glaciofluvial materials overlying dark, heavy clays.

Large areas of glaciofluvial outwash materials were exposed following the recession of Glacial Lake Peace-Bessborough. Subsequent erosion and deposition by wind from the southwest, having a bearing of 8° north of east (Odynsky, 1958), has resulted in the formation of parabolic dunes across the Wapiti Plains. The two major source areas for these eolian deposits were the area in the vicinity of Nose Creek and the Wapiti River and the area between Big Mountain Creek and the Smoky River.

3. SOILS

Soil is an unconsolidated surficial material composed of mineral, air, water, and organic matter which is capable of supporting plant life. It is a dynamic system that develops at a particular place on the landscape, based on the varied interaction among parent materials, climate, topography and vegetation over time.

Within the Deep Basin study area the following soil orders were identified based on the Canadian System of Soil Classification (1978): luvisols, brunisols, organics, gleysols and regosols. Luvisols and brunisols account for most of the soils with organics, gleysols and regosols occurring locally throughout the study area. Previous soils research in the study area has included work by Lindsay, Wynnyh and Odynsky (1964) and by Twardy and Corns (1980).

The soil orders mentioned above reflect patterns of elevation, climate and drainage. The organic and gleysolic orders develop in response to the drainage factor while luvisols, brunisols and regosols show a zonation pattern with increasing elevation accompanied by increasing climatic severity.

Luvisolic soils develop at lower elevations within the study area, on glaciolacustrine and morainal materials. These soils are slightly acidic to moderately alkaline and have relatively high rates of nutrient cycling and cation exchange capabilities. The clay content of these soils is high, particularly on the glaciolacustrine materials, often resulting in very compact soil horizons. Subgroups present include Orthic Gray Gleyed Gray, Solonetzic Gray, Gleyed Solonetzic Gray, and Brunsolic Gray Luvisols. The Solonetzic Gray and Gleyed Solonetzic Gray Luvisols are most common on glaciolacustrine deposits while the Brunisolic Gray Luvisols develop in coarser-textured materials, as well as at higher elevations where soil development is limited by climate.

The brunisolic soils generally occur at mid to upper elevations in the study area where climate and topography becomes a restricting factor to soil development. Colluvial and residual materials are usually associated with these soils at the upper elevations. Brunisols are also found at lower elevations, however, they are generally restricted to coarse-textured eolian and glaciofluvial materials. Subgroups include Eluviated, Eutric and Dystric Brunisols, Orthic Eutric and Dystric Brunisols and gleyed phases of all of these. In general, the orthic subgroups occur on very steep topography while the eluviated subgroups are more common on relatively gentle slopes. The Dystric Brunisols are more common in areas of continental till while the Eutric Brunisols occur in association with the less acidic cordilleran till.

Regosolic soils occur throughout the area on very steeply sloping colluvial slopes and in valley floodplains. In addition, they are also present at the highest elevations in the area where a combination of steep slopes and very severe climate restricts soil development.

Gleysolic and organic soils occur throughout the area in areas of poor drainage. As such they are generally found in lower slope positions or in depressional terrain.

This discussion of soils in the area is a generalized overview. More detailed information appears on the maps and in Volume I of this report.

4. CLIMATE

Climatic data are only available from a few stations in the Deep Basin study area (Appendix E) and thus climate cannot be analyzed in great detail. Several regional trends are apparent, however. Temperatures tend to decrease while precipitation increases with increasing elevation. These changes are reflected in the transition from deciduous to coniferous tree cover and from understories dominated by deciduous shrubs and broad-leaved herbs to ones dominated by ericaceous shrubs and mosses while passing through the Boreal Mixedwood - Boreal Foothills - Boreal Uplands - Subalpine sequence of ecoregions. Local variations in major river valleys and in the high relief topography of the foothills and mountains cause considerable deviation from this regional climatic trend which are reflected in local vegetation patterns. The influence of chinooks in major river valleys, which are oriented from east to west, causes considerable local variation in winter climatic conditions.

Available climatic data are analyzed below.

4.1 Climatic Conditions During the Growing Season (May 1 - September 30)

4.1.1 Temperature

Mean daily temperatures during the growing season range from 12.2°C to 7.6°C, decreasing by about 0.9°C per 1 000 m of elevation (Figure 156). This regional pattern is reflected in a shift from deciduous-dominated to coniferous-dominated forests as elevation increases.

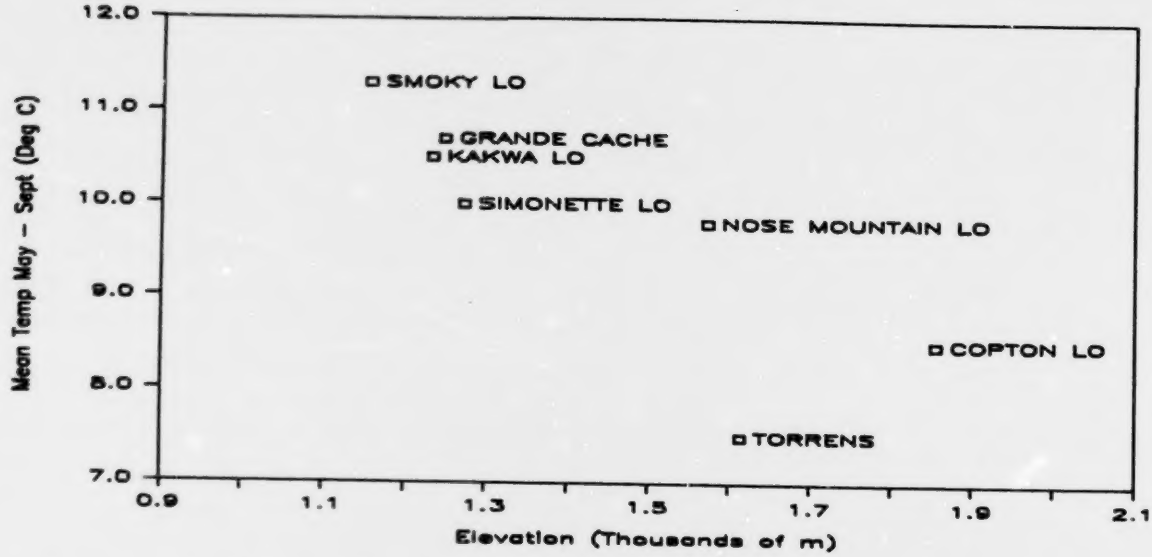

Figure 156: Mean Summer Temperature vs Elevation

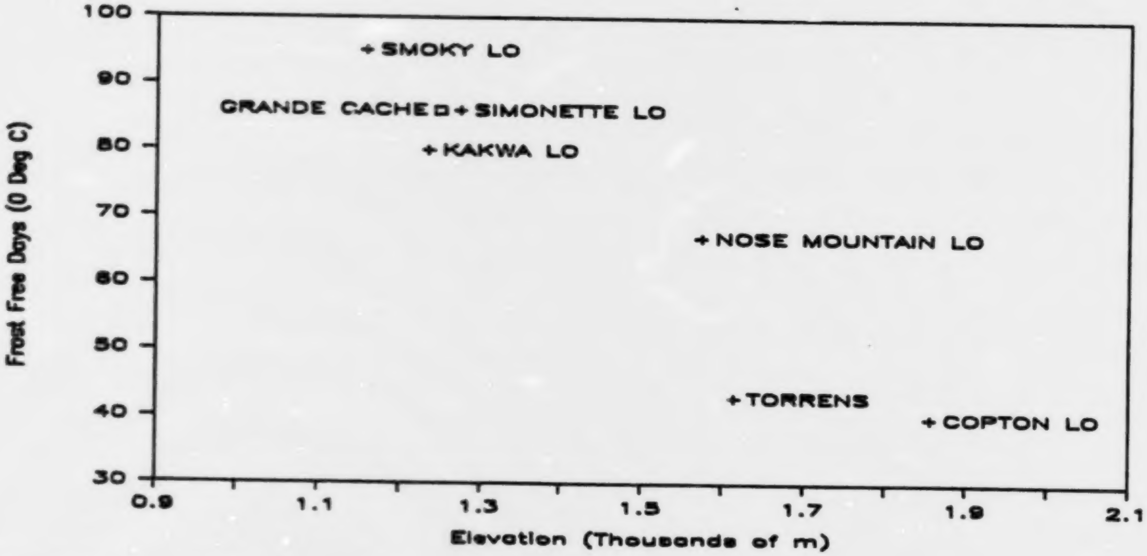

Figure 157: Frost Free Days vs Elevation

Slope and aspect cause significant variation in the regional temperature (and available moisture) pattern in areas of high relief. At a slope of 30%, for example, a southwest exposure receives 15% more solar energy in summer than a northeast exposure; in winter, the difference rises to 20-25%. This brings about higher minimum and maximum air temperatures, higher soil temperatures and lower soil moisture, a less shallow snowpack and earlier snowmelt on slopes exposed to the southwest. As a result, a given vegetation type will occur at higher elevations on southern exposures, although some types may be excluded due to the dryness of these slopes.

Topography also influences the regional climate. For example, the South Wapiti ranger station is cooler on average than the Economy and Bald Mountain lookout towers despite its lower elevation (Appendix E). The South Wapiti Ranger Station is located on a long concave slope that is subject to cold air drainage, while cold air drains away from the ridgetops on which the lookout towers are located.

4.1.2 Frosts

The length of the frost-free period (consecutive days above 0°C, screen height) at forestry lookout towers decreases from 112 days (Economy Lookout) to 40 days (Copton Lookout) as elevation increases (Figure 157). Elevation cannot be used to predict the frost-free period accurately because of local topographic influences. There is nearly as much variation among frost-free periods at the three lowest stations (Economy Lookout, Debolt and South Wapiti Ranger Stations) as there is across the entire study area.

4.1.3 Growing Degree Days

Growing degree days is a measure of heat input that is used to predict plant growth. It is a cumulative measurement of mean daily temperatures above 5°C for the period May 1 to September 30.

Values for growing degree days are generally low compared to the rest of the province. Three stations have climates that impose a moderate heat limitation to the production of tilled crops (1 050-1 300 growing degree days, Strong and Leggat, 1981); Bald Mountain and Economy Lookouts and the Debolt Ranger Station. The limitation to the production of tilled crops is severe at the remaining stations.

4.1.4 Precipitation

Precipitation during the growing season accounts for 60-70% of annual totals and varies from 220 mm at Copton Lookout to 602 mm at Nose Lookout. In general, precipitation increases at higher elevations (Figure 158), but the relationship becomes less well defined in areas of high relief. For example, the Narraway and upper Kakwa river valleys seem to lie in a partial rain shadow.

High variability in summer rainfall because of thunderstorms is a striking characteristic of the regional climate. An average of 25-30 thunderstorms are recorded per year (Lawford 1970), with the frequency of lightning strikes indicating that they are more common the eastern part of the study area (Stashko 1972). Storms yielding as much as 170 mm of rain in one day can be expected once in 25 years (Dupuis, pers. comm.)[1]

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[1] Dupuis, S. Climatologist. Resource Appraisal Section, Alberta Energy and Natural Resources

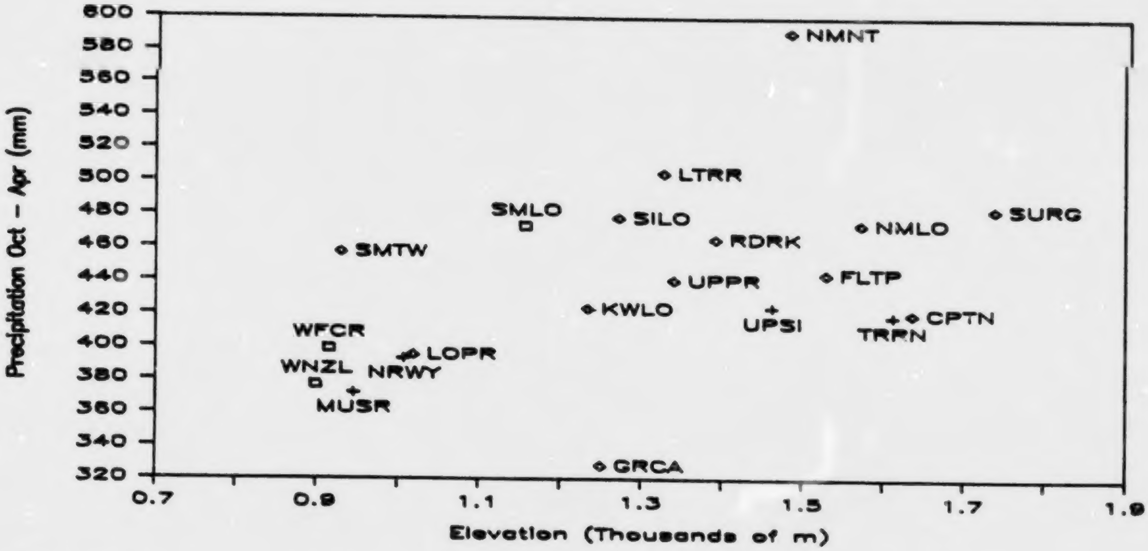

Figure 158: Summer Precipitation vs Elevation

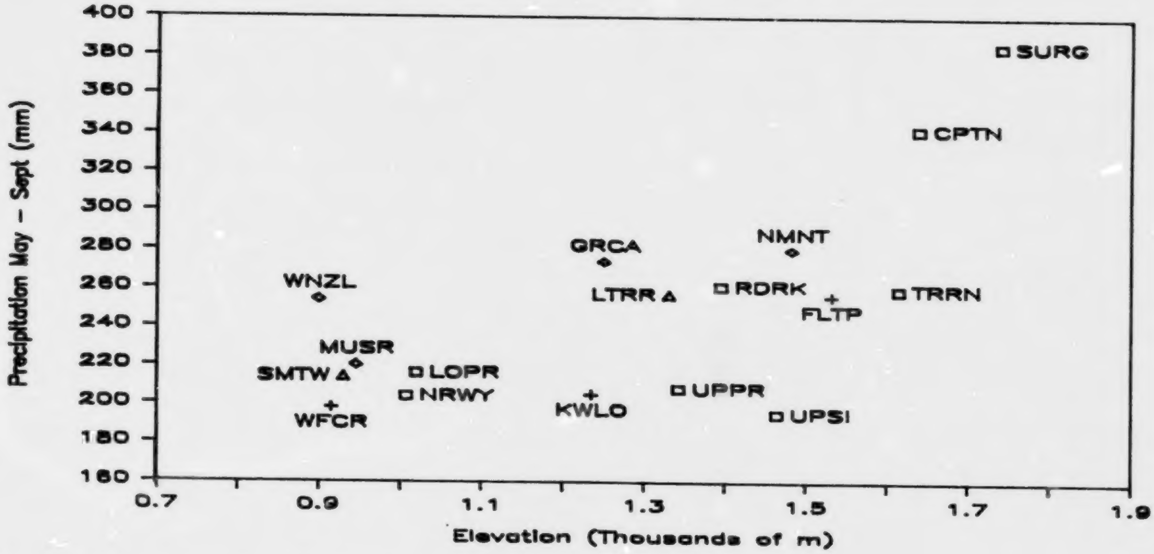

Figure 159: Winter Precipitation vs Elevation

and yields of 40-50 m m/day would be considered normal highs in any given year. Such intensive rainfall contributes to the high silt loads carried by streams and rivers for much of the growing season.

Storm tracks tend to follow major river valleys from southwest to northeast rather than crossing major ridge systems. This accounts for the higher frequency of lightning strikes in the eastern part of the area and suggests that precipitation will be higher in the valleys of the Smoky, Kakwa, Cutbank and Wapiti rivers than elevation would indicate.

4.2 Climatic Conditions During the Winter (October 1 to April 30)

Based on observations elsewhere on the Eastern Slopes, winter temperatures of -11.5°C to -23°C (February-March) are expected on the low-lying Wapiti Plains in the northern part of the area (Strong and Leggat 1981). Approaching treeline, expected temperatures rise to -7°C to -12°C (February-March) as higher topography deflects cold Arctic air masses moving in from the north. Above treeline, mean temperatures of -14°C to -15°C (February-March) are typical of the Eastern Slopes. Cold winter temperatures are modified locally by chinooks in the Smoky and Kakwa river valleys.

Mean winter precipitation varies more than twofold across the area from less than 180 mm to more than 360 mm water equivalent. There is a trend of increasing snowfall with increasing elevation (Figure 159), but local variation is great in areas of high relief because of the rainshadow effect. Accumulated snow depth is also highly variable because of local variation in packing, melting, redistribution by wind and gravity, and sublimation.

Data from nine forestry lookout towers, two ranger stations and 18 Sacramento precipitation gauge stations appear in Appendix E. Also included are limits for climatic parameters in each ecoregion.

5. HYDROLOGY

5.1 Rivers

The study area lies wholly within the Smoky River drainage basin, which is part of the Peace River system. It is drained by six major rivers: the Smoky, Kakwa and Wapiti/Narraway rivers, originating in the Rocky Mountains and Foothills, and the Cutbank, Little Smoky and Simonette/Lookout orginating in the Western Alberta Plains (Figure 160). The rivers exhibit significant differences in hydrological response as described below.

5.1.1 Seasonality of Discharge

Discharge data (Environment Canada, 1980a) show that rivers originating in the Rocky Mountains and Foothills tend to have later peak flows than rivers that arise in the Western Alberta Plains, because lower average temperatures at higher elevations lead to later snowmelt (Figure 160).

Despite this general relationship, however, the timing of peak flow is quite variable. All of the rivers in the study area are prone to flash-flooding during periods of especially high rainfall in summer. In 1976, for example, peak flows were recorded in August in all of these rivers (Environment Canada, 1980a).

5.1.2 Mean Discharge Rates

Mean discharge rates during the period May-October vary from 10.1 to 618.2 m^3/sec among the rivers in the study area (Table 29).

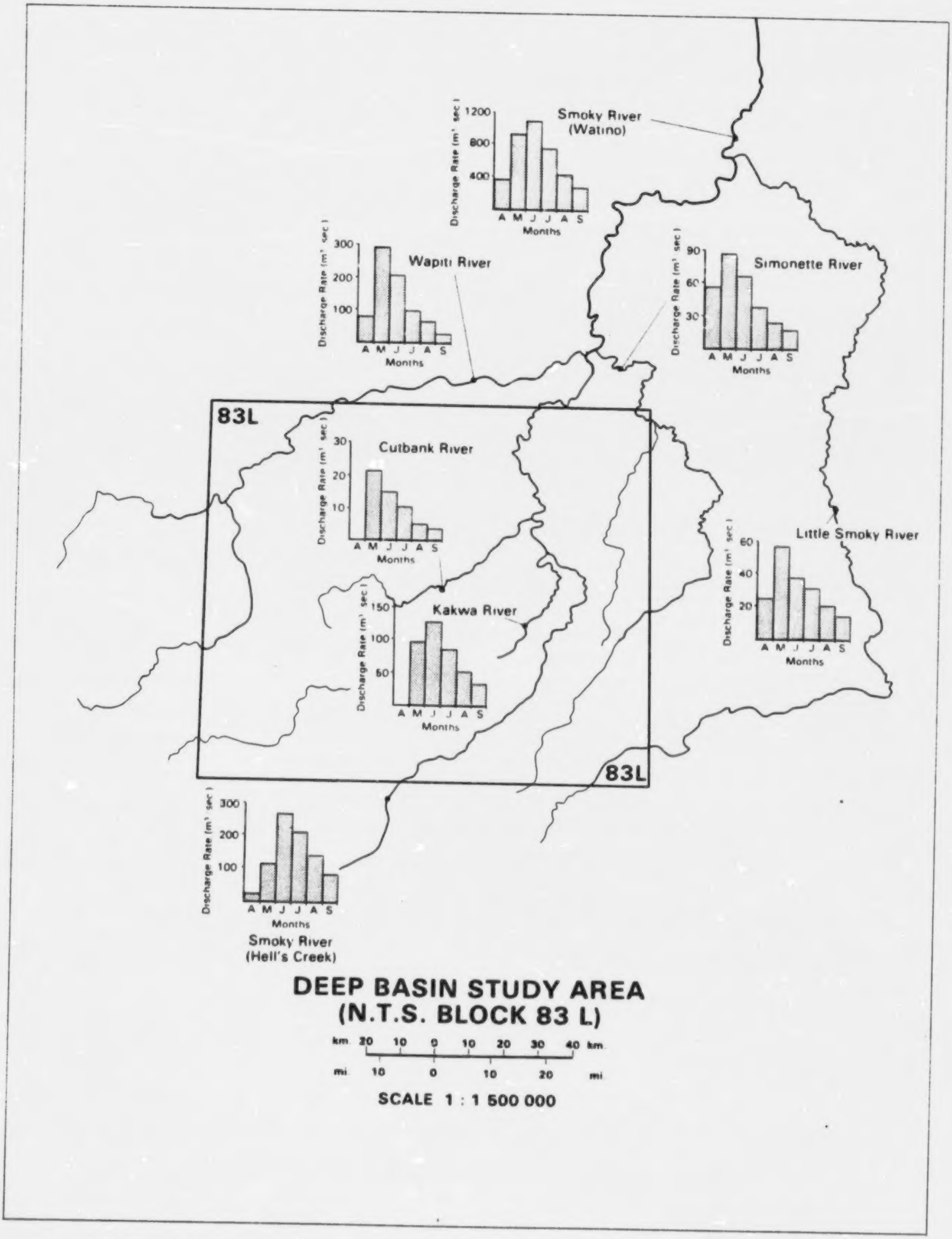
Smoky River
(Watino)
Discharge Rate (m³ sec)
1200
800
400
A M J J A S
Months
Wapiti River
Discharge Rate (m³ sec)
300
200
100
A M J J A S
Months
Simonette River
Discharge Rate (m³ sec)
90
60
30
A M J J A S
Months
83L
Cutbank River
Discharge Rate (m³ sec)
30
20
10
A M J J A S
Months
Little Smoky River
Discharge Rate (m³ sec)
60
40
20
A M J J A S
Months
Kakwa River
Discharge Rate (m³ sec)
150
100
50
A M J J A S
Months
83L
Discharge Rate (m³ sec)
300
200
100
A M J J A S
Months
Smoky River
(Hell's Creek)
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
km 20 10 0 10 20 30 40 km
mi 10 0 10 20 mi
SCALE 1 : 1 500 000

Figure 160: Major Rivers and their Annual Hydrographs

Differences in the sizes of drainage basins and precipitation regimes are the cause of this pattern. The Smoky, Kakwa and Wapiti/Narraway rivers which originate in the Rocky Mountains and Foothills have much higher mean discharge rates per unit of basin area than the rivers that have their headwaters at lower elevations.

Table 29

MEAN DISCHARGE RATES OF RIVERS

Station	Basin Area (km^2)	Mean Discharge May-October (m^3/sec) 100 km^2	Mean Discharge (m^3/sec/)
Smoky (Hell's Creek)	3 830	142.9	3.76
Kakwa	3 290	68.8	2.09
Wapiti	11 300	180.8	1.60
Smoky (Watino)	50 200	618.2	1.23
Cutbank	842	10.1	1.19
Little Smoky	3 000	28.0	0.93
Simonette	5 000	41.0	0.82

Source: Environment Canada 1980a

5.1.3 Water Quality

All of the rivers in the study area tend to carry relatively high silt loads, especially during periods of peak flow. Total hardness ranges from 98-391 mg/L and often exceeds the upper limit of 120 mg/L considered suitable for domestic consumption, especially during periods of low flow. Concentration of major and minor ions in river water are within the limits proscribed for domestic use (Environment Canada 1980b, 1982).

5.2 Lakes

The highest density of lakes and ponds is found on the Wapiti Plains in the northern part of the study area. These water bodies are relatively small and shallow, occupying small basins underlain by fine-textured tills, glaciolacustrine deposits, and bedrock. The orientation of many of these basins relative to coarse-textured outwash deposits suggests that groundwater is a significant component of the hydrologic input to these lakes and ponds.

Lakes and ponds are much less common in the Western Alberta Plains, Rocky Mountain Foothills and Rocky Mountains. Musreau Lake is the largest water body in this part of the study area. It is unique for the region, a remnant of a much larger lake that existed in glacial times.

A number of small lakes are found in old outwash and meltwater channels. Two Lakes, found at the headwaters of Gunderson and Stetson Creeks, are the largest lakes of this type. Others include Boundary, Trap and Chinook Lakes in the western part of the study area. Smaller lakes have developed in meltwater channels in the southeastern corner of the study area (Twp. 59, Rge. 2, 3).

Small kettle-like and drift basin lakes are also scattered throughout the Western Alberta Plains and Rocky Mountain Foothills on till deposits.

5.3 Groundwater

5.3.1 Flow Rates

Groundwater supplies in the area have been described by Barnes (1977). Depth to groundwater increases from east to west, from 15 m or less on the Deep Valley Plateau east of the Simonette River to 150 m or more on the dissected Western Alberta Plains and Rocky Mountain Foothills.

High groundwater flow rates are restricted to fracture zones in the bedrock because of the low porosity of the Paskapoo and Wapiti formation. Wells that intersect fracture zones yield 50-100 instantaneous gallons per minute (igpm) in the Western Alberta Plains, and up to 1 500 igpm in the Rocky Mountain Foothills. By way of contrast, wells outside of fracture zones yield less than 5 igpm, and surficial aquifers like outwash gravels yield 10-50 igpm.

5.3.2 Water Quality

The quality of groundwater supplies is generally high in the Rocky Mountain Foothills and Western Alberta Plains, with total dissolved solids ranging from 300-500 mg/L. Higher concentration of total dissolved solids in groundwater on the Wapiti Plains (900-1 000 mg/L) exceed the limit of 500 mg/L prescribed for domestic consumption (McNelley *et al*. 1979).

6. VEGETATION

Within the Deep Basin study area, fire has played a significant role in the development of the current vegetation. Recurrent fires within the past century have resulted in a mosaic of coniferous, deciduous and mixedwood forests. The aging of trees indicates that most stands originated following three major episodes of fire within the study area; 1880-1900, 1915-1925 and 1930-1940. These dates appear to correspond to unusually dry summer conditions (Hage, 1984).

The forest vegetation in the area shows a zonation pattern which is a result of the climatic changes with increasing elevation. The forest pattern changes from aspen forest at lowest elevations to lodgepole pine at mid elevations with Engelmann spruce and alpine fir at higher elevations. Alpine meadows occur at the highest elevations where the climate is too severe for tree species to survive.

The zonal pattern of vegetation is further influenced by variation in parent materials and drainage. The lower elevation aspen forests ocur on moderately well-drained glaciolacustrine sediments and, to some extent, on morainal deposits. These stands have a relatively lush understory of shrubs such as rose and low-bush cranberry with a variety of herb and grass species. Balsam poplar is present on the more moist sites with its abundance increasing with increasing moisture. These stands would eventually succeed to white spruce, however, frequent fires have resulted in the dominance of early successional stages. Lodgepole pine forests are found at low elevations on rapidly drained eolian and glaciofluvial materials. The understory of these stands is relatively sparse with lichens often present, indicating the dry site conditions. These sites will probably remain as lodgepole pine as other species cannot tolerate these dry site conditions. Wetter sites at low elevations support black spruce, tamarack, shrublands and sedge meadows.

The lodgepole pine forests at mid elevations occur dominantly on morainal materials with some occurrence of residual and colluvial materials. The understory in the pine stands change with increasing elevation. Lower elevations have relatively lush understories of low-bush cranberry and a variety of herbs while the upper elevation have understories of ericaceous shrubs and feathermosses which reflects the cooler climate. These stands have developed as a result of fires and would eventually succeed to white or Engelmann spruce with Engelmann spruce at higher elevations. Black spruce becomes a component of the pine stands on the wetter locations and occurs alone on the wettest sites.

The high elevation Engelmann spruce-alpine fir stands appear to develop in response to a cooler climate which reduces the incidence of fires. The understory vegetation is restricted to ericaceous shrubs and mosses at these elevations. Materials here are often colluvial with moraine and residual relatively common. These Engelmann spruce-alpine fir forests become more open with increasing elevation. The transition area to the alpine meadows supports krummholtz vegetation of Engelmann spruce and alpine fir.

The alpine meadows develop under a severe climatic regime which only a few plant species can tolerate. Willow shrublands develop in in protected locations, sedge meadows dominate in moist areas and species poor, lichen dominated communities occur in exposed locations. Much of this area has very shallow soils which further restricts plant growth.

The broad vegetation patterns described here are classified into ecoregions which are defined as climatic zones inferred by vegetation. These ecoregions are described in detail in Volumes I and II of this report.

7. FAUNA

The Deep Basin area supports a wide variety of fauna including big game, furbearers, fish and, to a lesser extent, waterfowl and upland game birds. Species diversity is enhanced by the wide range of ecological conditions that exist within the area.

7.1 Big Game

Big game species within the study area include moose, elk, caribou, mule deer, white-tail deer, bighorn sheep, mountain goat, grizzly and black bear, and cougar. Big game populations are considered to exhibit good productivity.

Big game habitat is closely associated with physiognomic structure of the vegetation and to a lesser extent topography. The edge of the forests and riparian zones are utilized to a greater degree by big game animals (except caribou) than the forest itself.

In the northern third of the study area mixedwood and deciduous forests with rich, moist herbaceous understories provide year-round habitat for white-tail deer, mule deer and to a lesser extent elk, moose and black bear. Poorly drained deciduous shrublands which occur throughout the study area provide year-round moose habitat and wintering habitat for elk and mule deer. In the southern portion of the study area open coniferous forests and subalpine meadows at higher elevations provide summer range for elk, moose, mule deer and grizzly bear and wintering range for bighorn sheep and mountain goats. In the extreme western and southwestern portion of the study area, climax coniferous forest and adjacent open areas with abundant lichen and moss cover provide year-round caribou habitat. Bighorn sheep prefer alpine meadows and rocky escape terrain in proximity to open stands of grass and shrubs. Steep grassy slopes close to the treeline with nearby rock outcrops for escape terrain provide suitable habitat for mountain goats.

Rugged, subalpine and alpine wilderness areas where open, unforested areas exist are the preferred habitat of the grizzly bear. Black bears, although well suited to the habitat of the study area, are found in greater abundance in other Eastern Slope regions due to their adverse relationship with the grizzly bear (Lynch, pers. comm).[2] They are more common and wide-spread in areas of less rugged terrain.

Cougars prefer dense cover on rocky rugged terrain. The most consistent habitat feature is the presence of mule deer. Populations are presently well below carrying capacity but this species is not considered to be rare or endangered.

Closed coniferous forests, although utilized by caribou, are not considered to be valuable habitat due to sparse understory composition. These communities are primarily used for shelter and travel, especially in the winter when the depth of snow prohibits movement in open areas. Moose, elk, mule deer and caribou better exploit their habitat for foraging further away from their escape terrain than do bighorn sheep, mountain goats and white-tail deer. Major wintering habitats for big game animals include broad river valleys and steep southeast exposures such as those found along the Smoky, Kakwa, Narraway, Wapiti, Cutbank, Simonette and Latornell river valleys.

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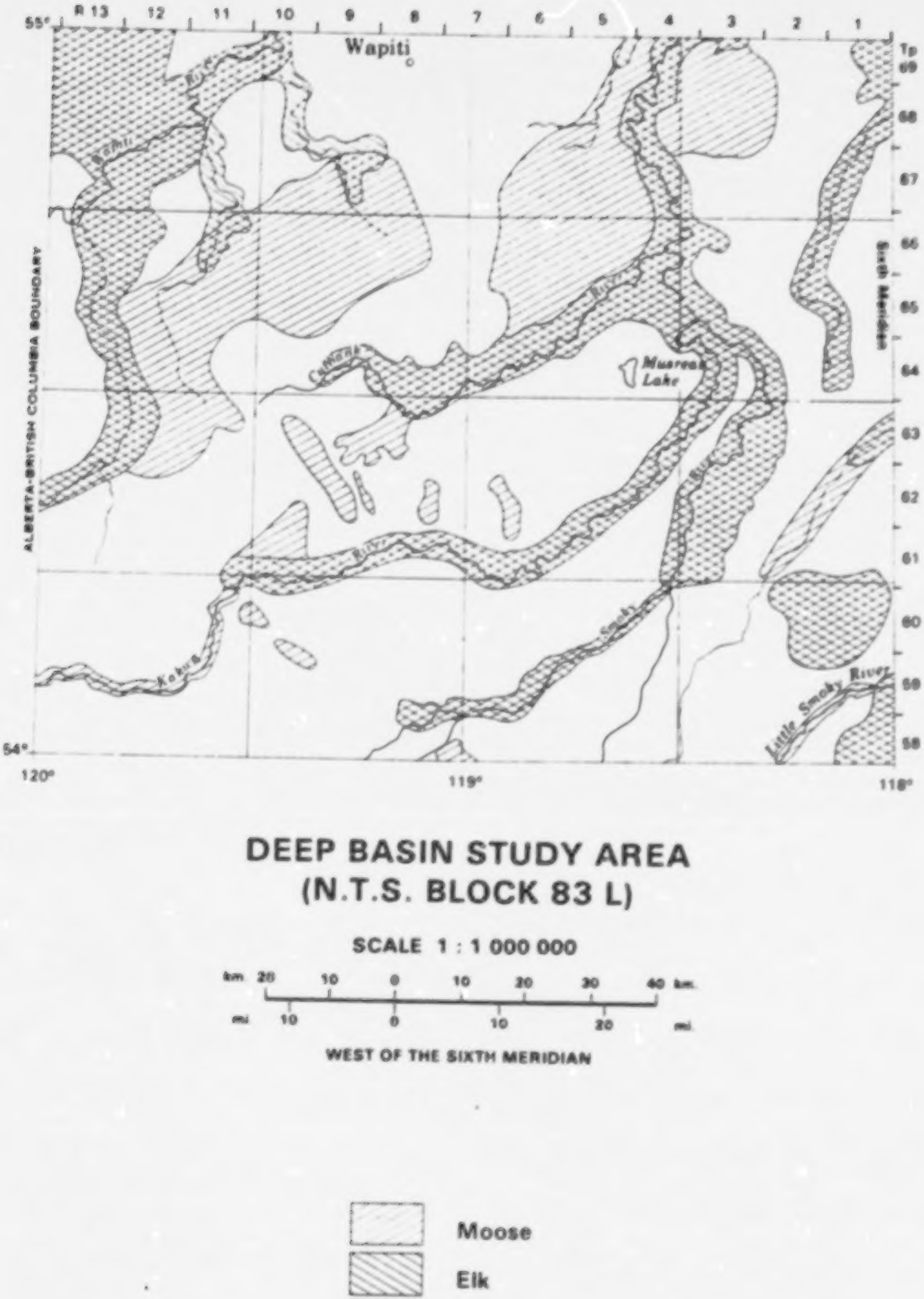
[2] Lynch, G. Alberta Energy and Natural Resources, Fish and Wildlife Division, Edmonton, Alberta.

Key wildlife areas have been identified by the Fish and Wildlife Division of Alberta Energy and Natural Resources for caribou, elk, mountain goat, bighorn sheep, moose, mule and white-tailed deer, and grizzly bear. Key wildlife habitats have been defined as habitat areas which are critical to a significant number of individuals of a species during at least a part of the year. Key wildlife habitats for moose and elk are shown in Figure 161. Figure 162 shows key wildlife areas for caribou, bighorn sheep, mountain goats, mule deer and white-tailed deer. Key grizzly habitat is shown on Figure 163. It should be noted that these maps are subject to periodic update.

7.2 Furbearers

The following terrestrial furbearers are found within the study area: pine marten, fisher, wolverine, lynx, coyote and wolf. Coyote and wolf are often referred to as furbearing carnivors. Semi-aquatic furbearers include beaver, mink and muskrat.

Pine marten are associated with climax spruce-fir or pine communities adjacent to spruce-fir stands. Optimum fisher habitat includes uneven-aged mixedwood forests with good interspersion of conifer stands and tall shrubs. Dense wolverine populations ($1/km^2$) are associated with closed coniferous forests and the ranges of either caribou or large diverse ungulate populations (Todd, 1978).



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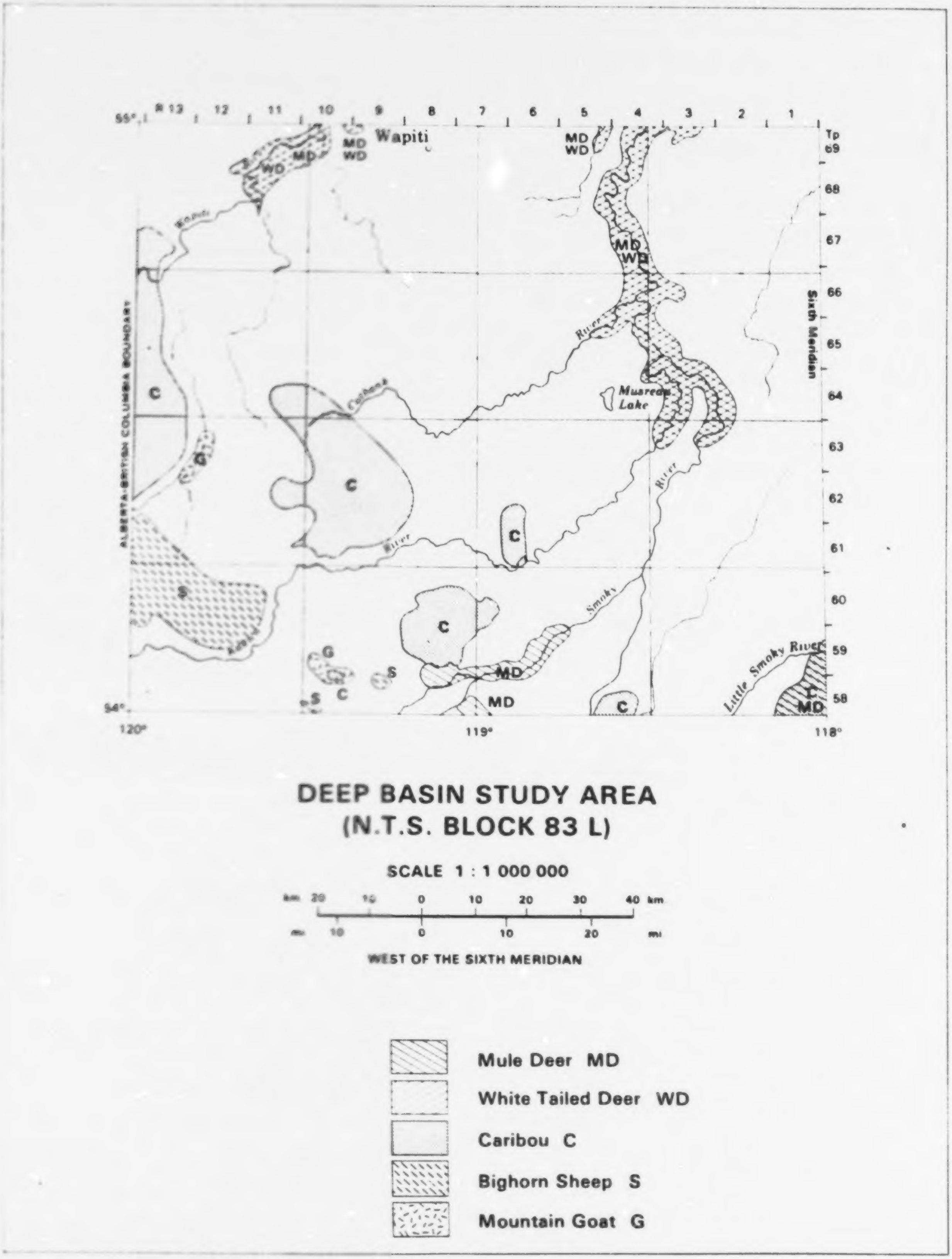
59
58
Wapiti
Wapiti River
Cutbank River
Musreau Lake
Smoky River
Kakwa
Little Smoky River
ALBERTA-BRITISH COLUMBIA BOUNDARY
Sixth Meridian
54°
120°
119°
118°
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
SCALE 1 : 1 000 000
km 20 10 0 10 20 30 40 km
mi 10 0 10 20 mi
WEST OF THE SIXTH MERIDIAN
Moose
Elk
Both

Figure 161: Key Wildlife Areas for Moose and Elk

Source: Fish and Wildlife Division, Alberta Energy and Natural Resources, 1983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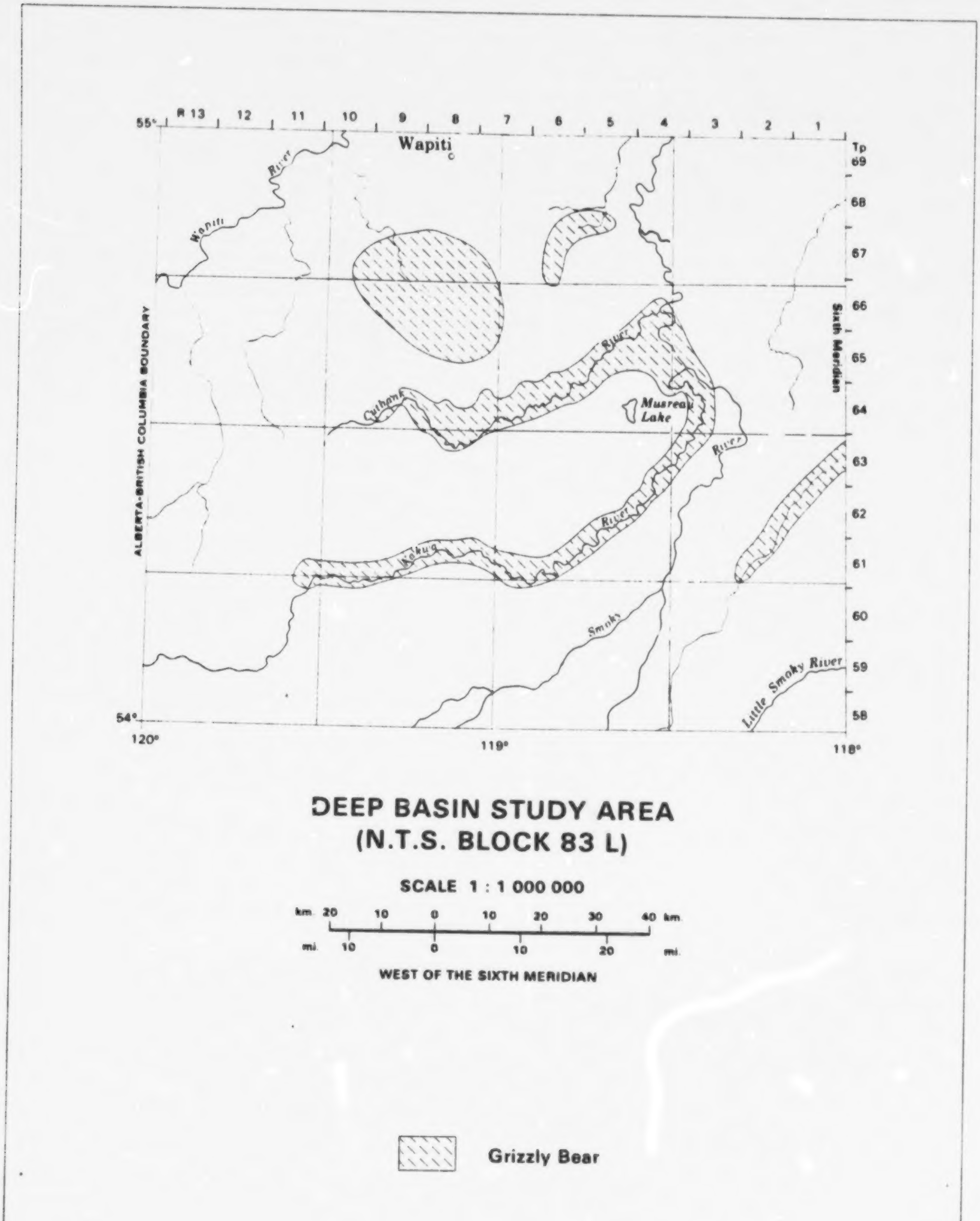
Wapiti
MD
WD
Wapiti
ALBERTA-BRITISH COLUMBIA BOUNDARY
Sixth Meridian
Cutbank
River
Musreau Lake
River
Smoky
Kakwa
Little Smoky River
C
G
S
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
SCALE 1 : 1 000 000
km 20 10 0 10 20 30 40 km
mi 10 0 10 20 mi
WEST OF THE SIXTH MERIDIAN
Mule Deer MD
White Tailed Deer WD
Caribou C
Bighorn Sheep S
Mountain Goat G

Figure 162: Key Wildlife Areas for Mule Deer, White Tailed Deer, Caribou, Bighorn Sheep, and Mountain Goats

Source: Fish and Wildlife Division, Alberta Energy and Natural Resources. 1983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61
60
59
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Wapiti
Wapiti River
Cutbank River
Musreau Lake
River
Kakwa River
Smoky
Little Smoky River
Sixth Meridian
ALBERTA-BRITISH COLUMBIA BOUNDARY
54°
120°
119°
118°
DEEP BASIN STUDY AREA
(N.T.S. BLOCK 83 L)
SCALE 1 : 1 000 000
km. 20 10 0 10 20 30 40 km.
mi. 10 0 10 20 mi.
WEST OF THE SIXTH MERIDIAN
▨ Grizzly Bear

Figure 163: Key Wildlife Areas for Grizzly Bear

Source: Fish and Wildlife Division, Alberta Energy and Natural Resources, 1983

Lynx, coyote and wolf also occur within the study area, but very little information has been collected on these species due to their large territory requirements.

Beaver, muskrat and mink are generally restricted to the northern portion of the study area where streamflow rates are reduced and coarse gravelly substrate materials are absent.

7.3 Fishery Resources

Although productivity levels are generally low, healthy populations of arctic grayling, dolly varden and mountain whitefish are native to the study area (Hunt, pers. comm.).[3] Rainbow trout have been stocked in Two Lakes (Twp. 62, Rge. 12, W6M) and Unnamed (Long) Lake (Twp. 63, Rge. 5, W6M). Low productivity levels may be attributed to cold stream temperatures.

The Cutbank, Wapiti, Narraway and Kakwa (below Kakwa Falls) Rivers support dolly varden, arctic grayling and mountain whitefish populations. The Smoky River supports dolly varden and mountain whitefish whereas the Simonette River is reported to have good populations of arctic grayling. The cold, faster flowing streams of the Western Cordillera generally support only small populations of dolly varden (Natural Resources Subcommittee, 1976).

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[3] Hunt, C. Alberta Energy and Natural Resources, Fish and Wildlife Division, Edmonton, Alberta.

7.4 Waterfowl

Waterfowl production within the study area is considered low. Trumpeter swans, harlequin ducks, hooded mergansers and to a lesser extent mallard ducks breed successfully but are generally restricted to the northern portion of the study area. Lack of open water is the major limiting factor to waterfowl production (Anonymous, 1970). The large distance between the study area and major migratory corridors also contributes to low waterfowl populations.

7.5 Upland Game Birds

Common upland game bird species within the study area include ruffed grouse, blue grouse, spruce grouse, rock ptarmigan and white-tailed ptarmigan. Ruffed grouse are commonly associated with mixedwood forests and riparian areas while spruce grouse utilize coniferous dominated mixedwood forests and adjacent organic ares. Blue grouse habitat includes open to closed coniferous forests within the lower to middle subalpine areas. Ptarmigan are found within the upper subalpine and alpine areas of the study area.

8. LAND USE AND ECONOMIC RESOURCES

Although recent economic activities within the Deep Basin/Kakwa Wapiti study area are readily visible to the human eye, a major portion of the study area represents one of the last untouched wilderness areas in Alberta. Outside of a native and forestry operations settlement at Shuttler Flat, no settlements exist within the study area; however, recent agricultural expansion into portions of Township 69 have resulted in a influx of settlers into the extreme northern portion of the study area. The two major, but relatively new communities of Grande Prairie and Grande Cache, are located approximately 15 km north and south of the study area, respectively.

Early economic development within the study area was limited to trapping and local coal and lumber operations. Within the past quarter century major oil and gas activities, coal and gravel extraction, forestry operations and agricultural expansion have resulted in significant modifications to the landscape.

8.1 Forestry Resources

Over the past twenty years extensive forestry operations by both Proctor & Gamble Cellulose Ltd. (P&G) and North Canadian Forest Products (CANFOR) have resulted in significant portions of land being harvested for pulp (P & G) and sawlog (CANFOR) production. Proctor & Gamble is harvesting mainly lodgepole pine from the central and southwestern portions of the study area. Within the past two years, P & G has begun to harvest some mature aspen stands in the north-central portion of the study area. CANFOR operations have generally been confined to the southeastern portion of the study area where they are harvesting mainly white spruce.

8.2 Mineral Resources

Natural gas, coal and to a lesser extent oil and gravel are considered to be economically important within the Deep Basin study area. Silica sand, clay, concrete and phosphate rock, bentonite and possibly uranium also occur within the study area but are not considered to be economically important. Only those resources considered to be economically viable will be discussed.

8.2.1 Oil and Natural Gas

Oil and gas exploration within the past quarter century have resulted in a mosaic of well sites, refineries, pipelines and seismic lines that criss-cross the entire study area.

Natural Gas. The Deep Basin gas field occurs mostly within the Wapiti Plains and the Western Alberta Plains and extends for some 700 km in a northwest trending belt into British Columbia. The Deep Basin is bounded to the north-northeast by the Lower Cretaceous Fox Creek escarpment and to the south-southwest by the Rocky Mountain Foothills. The Energy Resources Conservation Board (ERCB) (1981) estimated the initial established marketable gas reserves to be 109 billion cubic metres. This represents the largest potential source of natural gas in North America (Sandmeyer, 1980).

Within the Deep Basin study area, eighteen gas fields have been identified by the ERCB (1983), most of which fall within the Deep Basin field.

1. Elmworth
2. Wapiti
3. Gold Creek
4. Cutbank
5. Bilbo
6. Steep
7. Newand
8. Karr
9. Kakwa
10. Route
11. Lynx
12. Latornell
13. Musreau
14. Narraway
15. Palliser
16. Network
17. Redrock
18. Wanyandi

Six gas processing plants occur within the study area and generally reflect the overall importance of this resource to the study area.

Recent activity has focussed on shallow Mesozoic sandstone formations where the greatest portion of natural gas has been discovered in "low permeability" or "tight" formations. The low permeability of these tight formations has not permitted well production rates high enough to be commercially produceable.

Oil. Only three oil fields have been identified within the study area by the ERCB (1983). These fields are the Kakwa, Jayar and Lator (ERCB, 1983).

8.2.2 Coal

Three major coal fields have been identified within the study area by the Energy Resources Conservation Board (Natural Resources Subcommittee, 1976). These include the Musreau Coal Field, the Kakwa River Coal Field and the Smoky River Coal Field, the latter being the only producing coal field in the study area.

The Musreau Coal Field, located within the Interior Plains near Musreau Lake (Twp. 64, Rge. 5, W6M), contains thick Ardley coal seams of the Scollard member of the Paskapoo Formation. This coal is of the sub-bituminous to high volatile type. Ardley coal seams also occur along parts of the lower reaches of the Simonette, Kakwa and Smoky River valleys and within the Nose Mountain, particularly in the vicinity of the Cutbank River.

The Smoky and Kakwa River coal fields occur within the Western Cordillera. The Smoky River coal field is located north of Grande Cache in the vicinity of Sheep Creek and Smoky River. The Kakwa River Coal field includes parts of Torrens Ridge, Coal Ridge and Horn Ridge. The Smoky and Kakwa fields are both part of the Lower Cretaceous Luscar Formation which extends in a northwest-trending belt from the northeastern edge of Jasper National Park into British Columbia. These coals are of the low volatile bituminous type.

Extensive coal mining operations by the Smoky River Coal Company are confined to the area between Sheep Creek and the Smoky River. The coal, which is being mined from the Lower Cretaceous Luscar Formation, is destined mainly for export to Japan. A significant portion of the disturbed land has been reclaimed in recent years.

8.2.3 Gravel

Gravel deposits within the study area, although not extensive, occur mainly as glaciofluvial terraces bordering major drainage channels. Significant deposits can be found along the upper reaches of the Smoky River and the lower reaches of Muskeg River and Sheep Creek. Other major deposits are found on terraces adjacent to the Wapiti River especially near its confluence with Nose Creek and the area around Lingrell Lake. A small area of Tertiary gravels outcrop along the Forestry Trunk Road, south of the Smoky Fire tower. The above mentioned areas are currently being mined for gravel resources.

8.3 Agriculture

Major portions of Township 69, Ranges 6-12, W6M have been cleared in recent years to provide additional agricultural land. Most of these lands have been cleared for pasture and such crops as barley, hay, canola, wheat and oats.

APPENDIX E

CLIMATIC PARAMETERS FOR SPECIFIC STATIONS WITHIN THE DEEP BASIN AREA

BALD MOUNTAIN LO

54°49'N 118°55'W 939 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	14.6	17.6	20.0	18.9	14.2	M	M	M	M
Daily Minimum Temperature	M	M	M	M	3.9	7.3	9.5	8.6	4.5	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	9.4	12.6	14.8	13.8	9.4	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.1	1.1	1.2	1.7	2.7	M	M	M	M
Extreme Maximum Temperature	M	M	M	23.3	28.9	31.1	31.1	31.7	30.0	23.9	M	M	31.7
Years of Record	0	0	0	4	15	16	16	16	14	3	0	0	
Extreme Minimum Temperature	M	M	M	M	-5.0	-3.9	1.7	-3.0	-10.6	-1.7	M	M	M
Years of Record	0	0	0	0	12	16	16	16	15	1	0	0	
Rainfall	M	M	M	M	39.8	89.3	74.8	80.9	55.5	M	M	M	M
Snowfall	M	M	M	M	10.8	0.0	0.0	1.7	7.9	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	53.2	89.3	74.8	83.3	63.8	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	0.0	39.4	53.4	51.1	47.2	36.3	11.4	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	18.5	50.8	90.2	85.1	63.2	52.1	11.9	1.3	M	M
Years of Record	0	0	0	6	24	27	26	27	22	5	1	0	
Greatest Snowfall in 24 Hours	M	M	M	21.8	16.3	T	0.0	25.9	13.7	23.4	M	M	M
Years of Record	0	0	0	7	23	27	26	27	22	6	0	0	
Greatest Precipitation in 24 Hours	M	M	M	23.6	50.8	90.2	85.1	63.2	52.1	23.4	M	M	M
Years of Record	0	0	0	7	25	27	26	27	22	7	0	0	
Days with Rain	M	M	M	M	7	11	12	12	9	M	M	M	M
Days with Snow	M	M	M	M	2	0	0	0	2	M	M	M	M
Days with Precipitation	M	M	M	M	9	11	12	12	10	M	M	M	M

COPTON LO

54°11'N 119°24'W 1 856 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	M	10.9	14.1	12.8	M	M	M	M	M
Daily Minimum Temperature	M	M	M	M	M	2.7	5.6	5.0	M	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	M	6.8	9.8	9.0	M	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	0.0	1.4	1.5	2.0	M	M	M	M	M
Extreme Maximum Temperature	M	M	M	M	18.9	24.4	27.2	26.7	16.1	M	M	M	27.2
Years of Record	0	0	0	0	1	16	15	16	2	0	0	0	
Extreme Minimum Temperature	M	M	M	M	M	-5.6	-4.0	-6.1	-10.6	M	M	M	M
Years of Record	0	0	0	0	0	16	16	16	2	0	0	0	
Rainfall	M	M	M	M	M	64.3	77.2	64.7	M	M	M	M	M
Snowfall	M	M	M	M	M	15.0	1.5	8.1	M	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	M	85.8	78.8	73.8	M	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	70.8	56.7	41.8	39.5	25.6	0.0	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	M	28.4	58.2	48.0	36.8	13.5	8.9	M	M	M
Years of Record	0	0	0	0	6	19	21	19	5	2	0	0	
Greatest Snowfall in 24 Hours	M	M	M	M	22.9	25.9	16.3	42.9	40.9	23.6	M	M	M
Years of Record	0	0	0	0	5	19	22	20	6	2	0	0	
Greatest Precipitation in 24 Hours	M	M	M	M	55.1	85.9	48.0	50.8	49.5	23.6	M	M	M
Years of Record	0	0	0	0	6	19	21	19	6	3	0	0	
Days with Rain	M	M	M	M	M	11	12	12	M	M	M	M	M
Days with Snow	M	M	M	M	M	2	0	1	M	M	M	M	M
Days with Precipitation	M	M	M	M	M	13	12	12	M	M	M	M	M

ECONOMY LO

54°47'N 118°14'W 800 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	15.5	18.5	20.8	19.7	14.9	M	M	M	M
Daily Minimum Temperature	M	M	M	M	3.6	7.1	9.2	8.1	3.9	0.6	M	M	M
DAILY TEMPERATURE	M	M	M	M	9.5	12.8	15.0	14.0	9.5	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.3	1.1	1.0	1.6	2.5	0.9	M	M	M
Extreme Maximum Temperature	M	M	M	23.9	29.4	33.3	32.8	32.2	31.1	25.6	14.4	M	33.3
Years of Record	0	0	0	8	19	19	19	18	15	8	1	0	
Extreme Minimum Temperature	M	M	M	M	-6.1	-1.1	2.2	-3.0	-9.4	-7.2	M	M	M
Years of Record	0	0	0	0	19	19	19	18	16	4	0	0	
Rainfall	M	M	M	M	45.5	95.1	84.9	76.8	45.7	20.7	M	M	M
Snowfall	M	M	M	M	6.6	0.0	0.0	1.2	3.2	16.5	M	M	M
TOTAL PRECIPITATION	M	M	M	M	52.3	95.1	84.9	78.7	48.9	35.2	M	M	M
Standard Deviation, Total Precipitation	M	M	M	0.0	31.0	48.2	48.1	42.5	25.9	25.0	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	11.4	31.0	55.1	64.8	72.1	25.4	10.7	3.3	M	M
Years of Record	0	0	0	8	27	27	27	26	23	13	1	M	M
Greatest Snowfall in 24 Hours	M	M	M	22.4	25.1	0.0	0.0	16.8	23.9	45.7	M	M	M
Years of Record	0	0	0	4	27	27	27	27	23	11	0	0	
Greatest Precipitation in 24 Hours	M	M	M	22.4	42.2	55.1	64.8	72.1	30.5	45.7	M	M	M
Years of Record	0.	0	0	6	27	27	27	26	23	12	0	0	
Days with Rain	M	M	M	M	9	14	13	13	11	6	M	M	M
Days with Snow	M	M	M	M	1	0	0	0	0	3	M	M	M
Days with Precipitation	M	M	M	M	10	14	13	13	11	8	M	M	M

KAKWA LO

54°25'N 118°58'W 1 213 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	12.1	16.0	18.6	17.5	13.1	M	M	M	M
Daily Minimum Temperature	M	M	M	M	1.9	5.8	8.5	7.8	3.4	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	7.1	10.9	13.6	12.7	8.3	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.3	1.1	1.1	1.7	3.0	M	M	M	M
Extreme Maximum Temperature	M	M	M	17.8	27.8	30.0	31.1	31.7	28.3	18.3	M	M	31.7
Years of Record	0	0	0	2	14	17	17	16	11	3	0	0	
Extreme Minimum Temperature	M	M	M	M	-6.7	-4.0	-1.7	-2.2	-11.4	M	M	M	M
Years of Record	0	0	0	0	13	16	17	16	12	0	0	0	
Rainfall	M	M	M	M	43.2	104.1	87.3	95.4	51.7	M	M	M	M
Snowfall	M	M	M	M	17.6	2.5	0.0	2.3	17.9	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	62.9	106.6	87.3	98.1	68.3	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	47.7	59.0	47.7	47.1	36.7	13.4	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	13.2	52.9	111.3	66.0	50.5	34.8	9.7	M	M	M
Years of Record	0	0	0	7	21	25	25	25	20	5	0	0	
Greatest Snowfall in 24 Hours	M	M	M	31.5	41.9	17.5	0.0	26.4	35.6	21.3	M	M	M
Years of Record	0	0	0	5	21	25	25	25	20	4	0	0	
Greatest Precipitation in 24 Hours	M	M	M	31.5	52.9	111.3	66.0	50.5	36.3	21.3	M	M	M
Years of Record	0	0	0	5	20	25	25	25	20	5	0	0	
Days with Rain	M	M	M	M	9	14	12	13	10	M	M	M	M
Days with Snow	M	M	M	M	9	14	12	13	10	M	M	M	M
Days with Precipitation	M	M	M	M	11	14	12	13	11	M	M	M	M

NOSE MOUNTAIN LO

54°33'N 119°35'W 1 574 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	M	14.3	16.4	15.7	11.5	M	M	M	M
Daily Minimum Temperature	M	M	M	M	M	4.5	7.0	6.6	3.1	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	M	9.4	11.8	11.1	7.2	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	0.8	1.3	1.1	1.6	2.6	M	M	M	M
Extreme Maximum Temperature	M	M	M	M	25.0	28.9	28.9	28.3	26.7	15.6	M	M	28.9
Years of Record	0	0	0	0	8	22	22	22	14	2	0	0	
Extreme Minimum Temperature	M	M	M	M	-5.0	-4.4	0.0	-6.0	-13,9	-10.0	M	M	M
Years of Record	0	0	0	0	3	20	22	22	16	1	0	0	
Rainfall	M	M	M	M	M	113.1	116.7	99.6	42.9	M	M	M	M
Snowfall	M	M	M	M	M	6.6	0.0	5.8	23.8	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	M	120.9	116.7	105.3	76.5	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	105.0	73.8	57.1	56.5	44.8	0.0	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	M	91.0	125.0	69.3	52.1	43.7	11.4	M	M	M
Years of Record	0	0	0	0	6	26	26	28	19	4	0	0	
Greatest Snowfall in 24 Hours	M	M	M	M	48.3	30.0	0.0	37.1	50.8	102.9	M	M	M
Years of Record	0	0	0	0	9	26	26	28	18	5	0	0	
Greatest Precipitation in 24 Hours	M	M	M	M	91.0	125.0	69.3	52.1	50.8	102.9	M	M	M
Years of Record	0	0	0	0	7	26	26	28	19	4	0	0	
Days with Rain	M	M	M	M	M	13	14	12	7	M	M	M	M
Days with Snow	M	M	M	M	M	1	0	1	3	M	M	M	M
Days with Precipitation	M	M	M	M	M	13	14	13	10	M	M	M	M

PINTO LO

54°47'N 119°24'W 1 067 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	13.7	17.0	19.3	18.1	13.7	M	M	M	M
Daily Minimum Temperature	M	M	M	M	2.9	6.7	9.0	8.0	4.2	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	8.3	11.9	14.1	13.1	9.0	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.2	1.2	1.2	1.7	2.5	0.0	M	M	M
Extreme Maximum Temperature	M	M	M	19.4	28.9	31.1	31.1	31.1	27.8	22.2	M	M	31.1
Years of Record	0	0	0	3	14	16	16	16	13	4	0	0	
Extreme Minimum Temperature	M	M	M	M	-5.0	-1.1	2.2	-1.7	-9.4	-3.3	M	M	M
Years of Record	0	0	0	0	12	16	16	16	14	1	0	0	
Rainfall	M	M	M	M	50.1	103.2	188.6	88.4	54.3	M	M	M	M
Snowfall	M	M	M	M	9.8	0.5	0.0	3.1	6.9	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	59.9	103.8	188.6	193.2	63.7	39.4	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	41.4	59.5	46.0	52.4	31.7	32.4	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	11.4	35.9	171.1	61.0	67.1	42.2	15.7	2.0	M	M
Years of Record	0	0	0	5	19	20	22	22	18	9	1	0	
Greatest Snowfall in 24 Hours	M	M	M	27.9	38.1	7.6	0.0	30.5	24.4	30.5	M	M	M
Years of Record	0	0	0	6	19	20	22	22	18	9	1	0	
Greatest Precipitation in 24 Hours	M	M	M	27.9	38.1	1 7.6	0.0	30.5	24.4	130.5	M	M	M
Years of Record	0	0	0	6	20	20	22	22	19	8	0	0	
Days with Rain	M	M	M	M	8	12	13	13	10	M	M	M	M
Days with Snow	M	M	M	M	2	0	0	0	2	M	M	M	M
Days with Precipitation	M	M	M	M	9	12	13	13	11	M	M	M	M

SIMONETTE LO

54°14'N 118°25'W 1 274 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	11.6	15.3	18.0	16.9	12.4	M	M	M	M
Daily Minimum Temperature	M	M	M	M	1.6	5.6	8.2	7.3	3.3	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	6.6	10.5	13.1	12.1	7.9	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.4	1.3	1.3	1.8	2.2	1.1	M	M	M
Extreme Maximum Temperature	M	M	M	M	27.8	29.4	30.0	30.6	27.8	20.6	M	M	30.6
Years of Record	0	0	0	0	11	16	16	16	15	4	0	0	
Extreme Minimum Temperature	M	M	M	-6.7	-7.0	-2.8	1.1	-3.3	-10.0	-16.1	M	M	M
Years of Record	0	0	0	1	6	16	16	16	16	2	0	0	
Rainfall	M	M	M	M	46.0	116.9	106.7	104.4	58.1	14.1	M	M	M
Snowfall	M	M	M	M	21.8	2.6	0.0	2.3	18.1	57.0	M	M	M
TOTAL PRECIPITATION	M	M	M	M	67.1	119.6	106.7	107.4	77.4	47.0	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	64.0	58.7	58.9	51.6	45.0	30.2	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	M	49.0	108.9	56.6	57.2	36.1	25.7	M	M	M
Years of Record	0	0	0	0	16	24	24	25	24	9	0	0	
Greatest Snowfall in 24 Hours	M	M	M	21.1	52.0	17.8	0.0	16.5	38.6	23.1	M	M	M
Years of Record	0	0	0	2	14	25	24	25	25	7	0	0	
Greatest Precipitation in 24 Hours	M	M	M	21.1	57.0	88.9	56.6	57.2	47.0	25.7	M	M	M
Years of Record	0	0	0	2	13	24	24	25	24	8	0	0	
Days with Rain	M	M	M	M	8	14	14	15	11	2	M	M	M
Days with Snow	M	M	M	M	4	1	0	0	3	7	M	M	M
Days with Precipitation	M	M	M	M	10	14	14	15	12	7	M	M	M

SMOKY LO

54°24'N 118°18'W 1 158 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	13.5	16.8	19.1	17.9	13.7	M	M	M	M
Daily Minimum Temperature	M	M	M	M	2.9	6.8	9.1	8.4	4.5	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	8.3	11.8	14.1	13.2	9.2	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	1.1	1.2	1.1	1.7	3.2	0.6	M	M	M
Extreme Maximum Temperature	M	M	M	22.2	28.3	30.6	29.4	31.1	28.9	23.9	M	M	31.1
Years of Record	0	0	0	5	14	17	18	18	14	6	0	0	
Extreme Minimum Temperature	M	M	M	-15.0	-5.6	-2.0	1.7	-2.2	-10.0	-6.1	M	M	M
Years of Record	0	0	0	2	15	17	18	18	14	3	0	0	
Rainfall	M	M	M	M	54.8	113.3	111.4	97.5	63.7	M	M	M	M
Snowfall	M	M	M	M	13.1	3.3	0.0	1.4	12.3	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	68.6	116.9	111.4	98.9	76.8	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	0.0	44.8	57.0	48.8	47.6	47.1	0.0	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	16.3	38.6	167.3	62.2	62.7	43.9	15.2	M	M	M
Years of Record	0	0	0	8	16	19	19	20	15	6	0	0	
Greatest Snowfall in 24 Hours	M	M	M	20.3	32.0	17.0	T	11.4	28.4	28.4	M	M	M
Years of Record	0	0	0	4	16	19	19	20	16	2	0	0	
Greatest Precipitation in 24 Hours	M	M	M	25.1	38.6	67.3	62.2	62.7	43.9	28.4	M	M	M
Years of Record	0	0	0	5	16	19	19	20	15	5	0	0	
Days with Rain	M	M	M	M	10	16	16	15	11	M	M	M	M
Days with Snow	M	M	M	M	3	0	0	0	3	M	M	M	M
Days with Precipitation	M	M	M	M	11	16	16	15	12	M	M	M	M

SOUTH WAPITI RS

54°56'N 119°12'W 762 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	-9.5	-2.9	1.2	9.7	16.3	19.6	21.8	20.9	15.9	10.7	0.8	-5.8	8.2
Daily Minimum Temperature	-22.6	-16.8	-12.2	-4.2	1.1	4.9	7.0	5.6	1.5	-3.3	-10.9	-18.0	-5.7
DAILY TEMPERATURE	-16.0	-9.9	-5.5	2.8	8.7	12.3	14.4	13.3	8.6	3.7	-5.1	-11.9	1.3
Standard Deviation, Daily Temperature	6.6	6.4	3.4	2.6	1.1	1.0	1.1	1.4	2.0	1.7	3.7	4.9	1.2
Extreme Maximum Temperature	13.3	18.3	20.6	30.0	30.6	32.8	33.3	32.2	30.0	26.1	21.1	11.7	33.3
Years of Record	12	13	12	14	19	19	19	16	17	17	15	12	
Extreme Minimum Temperature	-47.2	-42.8	-40.6	-26.1	-7.2	-5.0	-3.0	-6.0	-13.3	-23.9	-38.9	-45.0	-47.2
Years of Record	12	13	14	11	18	19	17	17	18	17	14	12	
Rainfall	0.9	3.6	3.0	14.8	46.7	90.4	77.5	76.8	51.6	18.5	4.2	3.0	391.0
Snowfall	39.9	26.3	29.0	14.4	4.7	0.0	0.0	0.8	4.5	15.4	28.2	33.3	196.5
TOTAL PRECIPITATION	41.6	28.8	31.9	29.6	51.3	87.3	77.9	73.6	56.3	36.5	31.9	35.1	581.8
Standard Deviation, Total Precipitation	26.1	15.8	17.3	15.5	35.8	49.9	40.3	51.4	38.4	18.5	19.8	23.7	117.8
Greatest Rainfall in 24 Hours	3.6	6.1	10.2	21.1	33.6	70.4	50.8	64.8	44.5	18.3	8.9	17.6	70.4
Years of Record	12	13	14	15	18	19	18	17	18	18	15	13	
Greatest Snowfall in 24 Hours	20.3	21.3	22.9	25.4	8.9	0.0	0.0	19.8	13.7	38.6	20.3	22.4	38.6
Years of Record	12	13	14	13	17	19	19	18	18	18	14	14	
Greatest Precipitation in 24 Hours	21.8	21.3	26.7	33.8	33.6	70.4	50.8	64.8	44.5	51.2	20.3	23.6	70.4
Years of Record	12	13	14	14	19	19	18	17	18	18	14	14	
Days with Rain	1	3	2	6	10	13	13	13	12	7	2	1	83
Days with Snow	12	9	8	3	1	0	0	0	1	2	7	11	54
Days with Precipitation	13	10	10	8	10	13	13	13	12	9	9	12	132

TORRENS LO

54°11'N 119°53'W 1 829 m

	J	F	M	A	M	J	J	A	S	O	N	D	YR
Daily Maximum Temperature	M	M	M	M	M	10.7	13.8	12.6	8.1	M	M	M	M
Daily Minimum Temperature	M	M	M	M	M	2.7	5.5	5.2	1.9	M	M	M	M
DAILY TEMPERATURE	M	M	M	M	M	6.7	9.7	8.9	5.0	M	M	M	M
Standard Deviation, Daily Temperature	M	M	M	M	M	1.5	1.3	2.1	2.6	M	M	M	M
Extreme Maximum Temperature	M	M	M	M	21.1	24.4	26.7	28.9	22.2	14.4	M	M	28.9
Years of Record	0	0	0	0	3	14	15	15	10	1	0	0	
Extreme Minimum Temperature	M	M	M	M	-6.7	-7.8	-3.0	-6.1	-11.7	-5.0	M	M	M
Years of Record	0	0	0	0	1	15	16	15	6	1	0	0	
Rainfall	M	M	M	M	M	89.3	99.2	67.2	M	M	M	M	M
Snowfall	M	M	M	M	M	17.4	0.6	9.5	M	M	M	M	M
TOTAL PRECIPITATION	M	M	M	M	M	113.3	99.5	80.3	M	M	M	M	M
Standard Deviation, Total Precipitation	M	M	M	M	0.0	76.6	48.2	33.9	21.4	M	M	M	M
Greatest Rainfall in 24 Hours	M	M	M	M	7.1	105.4	64.5	41.1	20.1	3.0	M	M	M
Years of Record	0	0	0	0	2	16	16	14	6	1	0	0	
Greatest Snowfall in 24 Hours	M	M	M	M	9.1	30.7	5.8	48.5	37.8	30.5	M	M	M
Years of Record	0	0	0	0	2	14	16	14	5	1	0	0	
Greatest Precipitation in 24 Hours	M	M	M	M	15.0	105.4	64.5	55.6	47.0	30.5	M	M	M
qears of Record	0	0	0	0	2	16	16	15	6	1	0	0	
Days with Rain	M	M	M	M	M	11	13	13	M	M	M	M	M
Days with Snow	M	M	M	M	M	11	13	13	M	M	M	M	M
Days with Precipitation	M	M	M	M	M	13	13	14	M	M	M	M	M

AFS SACRAMENTO PRECIPITATION GAUGES

	NAME	LAT DDMM	LONG DDDMM	ELEV (M)	FROM YYMM	TO YYMM	FDFP (DAYS)	GDD (MAY	TEMP - SEPT)	TEMP DEC - FEB	PRECIP MAY - SEPT	OCT - APR
R01	Flat Top	5421	11928	1 530	7510	8310	M	M	M	M	453	241
R02	Wolf Creek-Cut Bank	5429	11910	914	7510	8310	M	M	M	M	401	188
R03	Red Rock-Dist. III Camp	5425	11918	1 393	7510	8310	M	M	M	M	475	250
R04	Nose Mountain	5433	11935	1 481	7510	8310	M	M	M	M	602	274
R05	Little Redrock	5425	11915	1 329	7510	8310	M	M	M	M	507	252
R06	Sulphur Range	5411	11943	1 737	7510	8310	M	M	M	M	490	363
R08	Pinto Tower	5447	11925	1 021	7610	8310	M	M	M	M	435	202
R09	Smoky Tower	5420	11826	930	7610	8310	M	M	M	M	474	203
R10	Kakwa	5424	11859	1 234	7610	8310	M	M	M	M	439	197
R11	Torrens Mountain	5419	1941	1 713	7610	8310	M	M	M	M	438	237
R12	Upper Prairie Creek 1	5410	11906	1 341	7610	8310	M	M	M	M	451	200
R13	Lower Prairie Creek 2	5411	11853	1 018	7610	8310	M	M	M	M	395	216
R14	Narraway	5437	11954	1 006	7610	8310	M	M	M	M	412	197
R15	Copton	5407	11932	1 637	7610	8310	M	M	M	M	424	328
R16	Econopmy Tower	5446	11814	853	7610	8310	M	M	M	M	394	193
R17	Musreau Creek	5434	11840	945	7910	8310	M	M	M	M	433	189
R18	Wenzel Creek	5434	11800	899	7910	8310	M	M	M	M	427	221
U09	Upper Simonette	5404	11853	1 463	7710	8310	M	M	M	M	466	192

DEEP BASIN GLOSSARY

Alluvial fan:	a cone shaped deposit of alluvium made by a stream where it runs out onto a level plain. The fans generally form where streams issue from mountains upon the lowland.
Alluvium:	material such as clay, silt, sand and gravel deposited by modern rivers and streams.
Anticlines:	a fold that is convex upward or had such an attitude at some stage of development.
Apron:	a relatively gentle slope at the foot of a steeper slope, and formed by materials from the steeper upper slopes.
Ardley coal:	a coal bearing strata commonly found within the Paskapoo Formation of the Interior Plains. Common sequence, from top to bottom consists of coaly shale, bentonite, shales and siltstones, bentonite, coal and shale.
Arete:	an acute and rugged crest of a mountain range, or a subsidiary ridge between mountains.
Aspect:	orientation of the land surface with respect to compass direction.
Association:	groups of communities of definite floristic composition and uniform physiognomy occurring in uniform habitat conditions. Usually named in terms of the dominant overstory and understory plants.
Asymmetric syncline:	a syncline in which one limb dips more steeply than the other.
Bedrock:	consolidated component comprised of elastic materials that are tightly packed or indurated. This includes igneous, metamorphic, sedimentary and consolidated volcanic rock.
Bentonitic:	bentonitic is a clay formed from the decomposition of volcanic ash and is largely composed of the clay minerals montmorillonite and beidellite.
Brunisolic:	an order of soils whose horizons are developed sufficiently to exclude the soils from the Regosolic order, but that lack the degrees or kinds of horizon development specified for soils of the other orders. These soils, which occur

	under a wide variety of climatic and vegetative conditions, all have Bm or Btj horizons. The great groups Melanic Brunisol, Eutric Brunisol, Sombric Brunisol, and Dystric Brunisol belong to this order.
Blanket:	a mantle of unconsolidated materials thick enough to mask the minor irregularities of the underlying unit but still conforming to the general topography, generally 1 m thick.
Bog:	a peat-covered or peat-filled area, generally with a high water table. Since the surface of the peatland is slightly elevated, bogs are either unaffected or partly affected by nutrient-rich groundwaters from the surrounding mineral soils. The groundwater is generally acidic and low in nutrients (ombrotrophic). The dominant materials are sphagnum and forest peat underlain.
Calcareous:	containing calcium carbonate $CaCO_3$.
Castellated peaks:	castle-like or battlemented shaped peaks.
Chroma:	the relative purity, strength, or saturation of a color.
Cirque:	a deep, steep-walled recess in a mountain caused by glacial erosion.
Climatic climax:	the theoretical community towards which all vegetation succession development within a region is tending. This final stage of development is in equalibrium with the general climate and is self regenerating.
Climax:	a plant community of the most advanced type capable of development under and in dynamic equilibrium with the prevailing environment.
Colluvium:	a heterogeneous mixture of material that as a result of gravitational action has moved down a slope and settled at its base.
Cols:	a saddle or gap across a ridge or between two peaks.
Community:	an aggregation of all plants and animals within a specified region of spruce and time.
Conglomerate:	a rock composed of rounded pebbles cemented together in a matrix of finer material, sometimes called "puddingstone".

Creep:	slow mass movement of soil and soil material down rather steep slopes primarily under the influence of gravity, but aided by saturation with water and by alternate freezing and thawing.
Cuesta:	a ridge, or belt of hilly land, formed on gently dipping rock strata from the more durable layers, which resist denudation better than the weaker layers and are thus left behind as uplands; it has a gentle dip slope on one side, and a relatively steep scarp on the other.
Daily maximum temperature:	based on a 24-hour period beginning at 8:00 A.M. The mean monthly maximum is simply the average of each daily maximum for the month.
Daily minimum temperature:	based on a 24-hour period beginning at 5:00 P.M. The mean monthly minimum temperature is the average of each daily minimum for the month.
Degree day:	a measure of the departure of the mean daily temperature above 5°C.
Deglaciation:	the uncovering of an area from glacier ice as result of melting of the glacier.
Dendritic:	a term used of any form which is branching, ramifying or dichotomising, thus giving the appearance of a tree in silhouette.
Deposit:	material left in a new position by a natural transporting agent such as water, wind, ice or gravity or by activity of man.
Dip:	the maximum slope of an inclined stratum of rock, measured from the horizontal.
Dolomite:	a semi-transparent crystalline mineral consisting of the double carbonates of calcium and magnesium.
Dominant species:	a species within a given region, which (i) is large in size, (ii) strongly influences the microclimate of other species, or (iii) controls the flow of mass or production.
Drainage classes:	a seven tiered classification of soil drainage taken from the Canadian System of Soil Classification, 1978.

Drift:	any rock material, such as boulders, till, gravel, sand or clay, transported by a glacier and deposited by or from the ice, or, by or in water derived from the melting of the ice.
Dystric Brunisol:	a great group of soils in the Brunisolic order. The soils may have mull Ah horizons less than 5 cm thick. They have Bm horizons in which the base saturation (NaCl) is usually 65% to 100% of the pH ($CaCl_2$) is usually 5.5 or lower.
Dunes:	wind-built ridges and hills of sand formed in the same manner as snowdrifts.
Edaphic:	(i) of or pertaining to the soil, (ii) resulting from or influenced by factors inherent in the soil or other substrate rather than by climatic factors.
Edaphic climax:	a vegetational climax created by changes in the local topography, soil, water conditions, fire or other disturbances such that the climatic climax cannot develop.
Eluvation:	the removal of soil material in suspension or in solution from a layer or layers of the soil
"en echelon":	parallel structural features that are offset like the edges of shingles on a roof when viewed from the side.
Eolian:	sediment generally consisting of medium to fine sand and coarse silt particle sizes that are well-sorted, poorly compacted and may show internal structures such as cross-bedding or ripople laminae, or may be massive. Individual grains may be rounded and show signs of frosting. These materials have been transported and deposited by wind action.
Erratic:	transported rock fragment different from the bedrock where it lies. The term is generally applied to fragments transported by glacier ice or by floating ice.
Esker:	a winding ridge of irregularly stratified sand, gravel and cobbles deposited under the ice by a rapidly flowing glacial stream.
Evapotranspiration:	the combined loss of water from a given area by evaporation from the soil surface and by transpiration from the plants.

Eutric Brunisol:	great groups of soils in the Brunisolic order. The soils may have mull Ah horizons less than 5 cm thick and they have Bm horizons in which the base saturation (NaCl) is 100%.
Eutrophic:	having concentrations of nutrients optimal or nearly so for plant or animal growth. It is used to describe nutrient or soil solutions.
Fault:	a fracture or fracture zone along which there has been displacement of the sides relative to one another parallel to the fracture. The displacement may be a few inches or many miles.
Floodplain:	deposits of alluvial as a veneer or blanket over a bedrock or gravel floor which has been cut and/or deposited by the lateral action of a river.
Fluvial:	sediments generally consisting of gravel and sand with some fractions of silt and clay. The gravels are typically rounded and contain interstitial sand. Fluvial sediments are commonly moderately to well-sorted and display stratification, although massive, non-sorted gravels do occur. These materials have been transported and deposited by streams and rivers.
Fold:	a flexure in rocks; that is, a change in the amount of dip of a bed, and also often a change in the direction of dip. If the flexure takes the form of an arch, the fold is termed an anticline, while a flexure in the form of a trough is a syncline.
Frost-free period:	that part of the year between the last frost of spring and the first frost of the fall.
Glacial drift:	all rock material carried by glacier ice and glacial meltwaters or rafted by icebergs. This term includes till, stratified drift and scattered rock fragments.
Glaciofluvial deposits:	material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and may occur in the form of outwash plains, deltas, kames, eskers and kame terraces.
Glaciolacustrine:	to be used where there is evidence that the lacustrine material were deposited in contact with glacial ice.

Gleysol:	great group of soils in the Gleysolic order. A thin Ah horizon (8 cm) is underlain by mottled gray or brownish gleyed material or the soil has no Ah horizon. Up to 40 cm of mixed peat or 60 cm of fibric moss peat may occur on the surface.
Gleysolic:	an order of soils developed under wet conditions and permanent or periodic reduction. These soils have low chromas, or prominent mottling, or both, in some horizons. The great groups Gleysol, Humic Gleysol and Luvic Gleysol are included in the order.
Gravel:	rock fragments 2 mm to 7.5 cm in diameter.
Gray Luvisol:	a great group of soils in the Luvisolic order occurring in moderately cool climates, where the mean annual temperature is usually lower than 5.5°C. The soils have developed under deciduous and coniferous forest cover and have an eluviated light-covered surface (Ae) horizon, a brownish illuvial B(Bt) horizon and usually a calcareous C horizon. The solum is base saturated (NaCl extraction). The Ahe horizon, is present, is less than 5 cm.
Great group:	a category in the Canadian system of soil classification. It is a traxonomic group of soils having certain morphological features in common and a similar pedogenic environment. Examples are Solonetz, Humic Podzol, Regosol, Gleysol, Fibrisol, etc.
Ground moraine:	an unsorted mixture of rock, boulders, sand, silt, and clay deposited by glacial ice. Ground moraine is usually in the form of undulating plains having gently sloping swells, sags and enclosed depressions.
Gully:	a channel caused by erosion and the concentrated but intermittent flow of water during and immediately after heavy rains.
Hogsback:	sharp anticlinal ridge, decreasing in height at both ends until it runs out. A ridge produced by highly tilted strata.
Homocline:	a group of inclined beds of the same dip, which may be either monoclinal, one limb of a fold or isoclinal, but whose actual relations are not determinate. Used in a more restricted sense than a monocline in that it applies to small or fragmentary areas.

Horizon:	a layer in the soil profile approximately parallel to the land surface with more or less well-defined characteristics that have been produced through the operation of soil forming processes.
Humic Gleysol:	a great group of soils in the Gleysolic order. A dark colored A (Ah or Ap) horizon more than 8 cm thick is underlain by mottled gray or brownish gleyed mineral material. It may have up to 40 cm of mixed peat on the surface.
Humisol:	a great group of soils in the Organic order that are saturated for most of the year. The soils have a dominantly humic middle tier, or middle and surface tiers if a terric, lithic, hydric, or cryic contact occurs in the middle tier.
Hummocky Moraine:	a till landscape composed of distinct knobs and depressions.
Humus:	that more or less stable fraction of the soil organic matter remaining after the major portion of added plant and animal residues have decomposed. Usually it is dark coloured.
Illuviation:	the process of deposition of soil material removed from one horizon to another in the soil, usually from an upper to a lower horizon in the soil profile. Illuviated compounds include silicate clay, iron and aluminum hydrous oxides and organic matter.
Imbricate thrust sheets:	a series of thrust sheets dipping in the same direction, sometimes called shingle-block structure.
Incised:	cut down into, as a river cuts into a plateau
Inclined:	a sloping, undirectional surface with a generally constant slope not broken by marked irregularities.
Insolation:	the rate at which total solar energy (direct and sky radiation) is received on a surface.
Interfluve:	the district between adjacent streams flowing in the same direction.
Interbedded:	occurring between beds, or lying in a bed parallel to other beds of a different material; interstratified.

Kame:	an irregular ridge or hill of stratified glacial drift deposited by glacial meltwaters.
Keewatin:	district of the Northwest Territories from which a major ice sheet originated.
Key Wildlife Habitat:	habitat areas which are critical to a significant number of individuals of a species during at least part of the year. This may mean, for wild ungulates, wintering mean dancing grounds; for waterfowl it may mean production (nesting) and staging areas.
Lacustrine Deposit:	material deposited in lake water and later exposed either by lowering of the water level or by uplifting of the land. These sediments range in texture from sands to clays.
Land Classification:	the arrangement of land units into various categories based on the properties of the land or its suitability for some particular purpose.
Landforms:	the various shapes of the land surface resulting from a variety of actions such as deposition or sedimentation, erosion and earth crust movements.
Leaching:	the removal from the soils materials in solution.
Levee:	a natural or artificial embankment along a river or stream.
Lichen:	a symbiotic, mutalistic association of an algae and a fungus.
Litter:	uppermost layer (L layer) of organic debris on a forest floor, i.e. the freshly fallen or slightly decomposed material (mainly leaf material, but also bark, twigs, fruit).
Limestone:	bedded sedimentary deposit consisting chiefly of calcium carbonate ($CaCO_3$) which yields lime when burned.
Lithic Layer:	bedrock under the control section of a soil. In Organic soils, bedrock occurring within a depth of between 10 cm and 160 cm from the surface.
Lithology:	the physical character of a rock, generally as determined megascopically or with the aid of a low powered magnifier.

Loess:	material transported and deposited by wind and consisting of predominantly silt-sized particles.
Lowland:	the low lying land of a region, in contrast with the mountainous areas.
Luvisolic:	an order of soils that have alluvial (Ae) horizons, and illuvial (Bt) horizons in which silicate clay is the main accumulation product. The soils developed under forest or forest-grassland transition in a moderate to cool climate. The great group Gray Brown and Gray Luvisol belong to this group.
Macroclimate:	climate as viewed at the hemispheric scale, with only major waves, blocking actions and broad circulation features considered.
Massifa:	a mountainous mass or a group of connected heights, whether isolated or forming a part of a larger mountain system. A massif is more or less clearly marked off by valleys.
Matterhorn:	a sharp, hornlike or pyramid-shaped mountain peak.
Mean daily temperature:	a mean daily temperature is equal to the average of the daily maximum and minimum temperature. The mean monthly temperature is the average of each mean daily temperature for the month.
Meander:	one of a series of somewhat regular and loop-like bends in the course of a stream.
Mesa:	a tableland; a flat-topped mountain or other elevation bounded on at least one side by a steep cliff.
Mesic layer:	a layer of organic material at a stage of decomposition between that of the fibric and humic layers.
Mesisol:	a great group of soils in the Organic order that are saturated for most of the year. The soils have a dominantly mesic middle tier, or middle and surface tiers of a terric, lithic, hydric or cryic contact occurs in the middle tier.

Microclimate:	the fine climatic structure of the air space that extends from the very surface of the earth to a height at which the effects of the immediate character of the underlying surface no longer can be distinguished from the general local climate (mesoclimate or macroclimate).
Mineral soil:	a soil consisting predominantly of and having its properties determined predominantly by mineral matter. It contains less than 17% organic carbon except for an organic surface layer that may be up to 40 cm thick if formed of mixed peat (bulk density 0.1 or more) or 60 cm if of fibric moss peat (bulk density less than 0.1).
Morainal:	sediment generally consisting of well compacted material that is non-stratified and contains a heterogeneous mixture of particle sizes, often in a mixture of sand, silt and clay that have been transported beneath, beside, on, within and in front of a glacier and not modified by an intermediate agent.
Mottles:	spots or blotches of different color or shades of color interspersed with the dominant color.
Mudstone:	an indurated clay rock which is not fissible.
Mull:	a zoogeneous forest humus form consisting of an intimate mixture of well-humified organic matter and mineral soil that makes a gradual transition to the horizon underneath. It is distinguished by its crumb or granular structure, and because of the activity of the burrowing microfauna (mostly earthworms), partly decomposed organic debris does not accumulate as a distinct layer (F layer) as in mor and moder.
Muskeg:	the term applied to alluvial areas with insufficient drainage, over which moss has accumulated to a considerable depth.
Organic:	an order of soils that have developed dominantly from organic deposits. The majority of Organic soils are saturated for most of the year, unless artificially drained, but some of them are not usually saturated for more than a few days.
Orogency:	the process of forming mountains, particularly by folding and thrusting.

Outwash:	sediments washed out by flowing water beyond the glacier and laid down as stratified drift in thin forest beds. The particle size may vary from boulders to silt.
Overstory:	the highest vertical relatively continuous layer of vegetative cover, e.g. the forest canopy in a forest system or a shrub canopy in a shrub system.
Parent material:	the unconsolidated and more or less chemically weathered mineral or organic matter from which the solum of a soil has developed by pedogenic processes.
Peat:	unconsolidated soil material consisting largely of undecomposed or only slightly decomposed organic matter.
Permafrost:	perenially frozen material underlying the solum.
pH, soil:	the negative logarithm of the hydrogen-ion activity of a soil. Most soil range in pH between 4.0-8.5.
Physiognomy:	the gross growth form of vegetation, e.g. grasslands, shrublands, forest.
Pitted:	a relatively flat area having prominent depressions or pits.
Porosity:	the volume percentage of the total bulk not occupied by solid particles.
Profile:	a vertical section of the soil throughout all its horizons and extending into the parent material.
Quartzite:	a granulose metamorphic rock consisting essentially of quartz.
Quaternary:	the latest period of time in the stratigraphic column, represented by local accumulations of glacial (Pleistocene) and post-glacial (Holocene) deposits which continue without change of fauna, from the top of the Pliocene (Tertiary).
Regosolic:	an order of soils having no horizon development or development of the A and B horizons insufficient to meet the requirements of the other orders. Regosol is the only great group in this order.

Relief:	elevations or inequalities of a land surface, considered collectively. Land having no uneveness of differences of elevation is called level; gentle relief is called undulating; strong relief, rolling; and very strong relief, hilly.
Residual material:	unconsolidated and partly weathered mineral materials formed by the disintegration of consolidated rock in place.
Ridged:	a long, narrow elevation of the surface, usually sharp crested with steep sides. The ridges may be parallel, sub-parallel or intersecting.
Rolling:	a very regular sequence of moderate slopes extending from rounded, sometimes confined concave depressions to broad, rounded convexities producing a wave-like pattern of moderate relief. Slope length is often 1.6 km or greater and gradients greater than 5%.
Sedimentary rock:	a rock-formed from material deposited from suspension or precipitated from solution and usually more or less consolidated. The principal sedimentary rocks are sandstones, shales, limestones, and conglomerates.
Seral stage:	a community stage or level of development in the sequence of vegetation succession.
Slumping:	the downward slipping of a mass of rock or unconsolidated material of any size, moving as a unit or as several subsidiary units, usually with backward rotation on a more or less horizontal axis parallel to the cliff or slope from which it descends.
Soil drainage:	the rate and ability of a soil to remove water in relation to the additions.
Steep:	erosional slopes, greater than 35°, on both consolidated and unconsolidated material.
Stratum:	a section of a formation that consists throughout of approximately the same kind of rock material.
Strike:	the direction of a horizontal line along a rock stratum perpendicular to the direction of dip.
Structure, soil:	the combination or arrangement of primary soil particles into secondary particles, units or peds. These peds may be, but usually are not, arranged in the profile in such a manner as to give a distinctive characteristic pattern. The

	peds are characterized and classified on the basis size, shape, and degree of distinctness into classes, types, and grades.
Succession:	the orderly replacement of one community stage by another over time.
Symmetrical fold:	a fold, the axial plane of which is essentially vertical, i.e. the two limbs dip at smaller angles.
Syncline:	a fold in rocks in which the strata dip inward from both sides toward the axis.
Talus:	a collection of fallen disintegrated material which has formed a slope at the foot of a steeper declivity.
Tarn:	a small mountain lake or pool, especially one that occupies an ice-gourged basin on the floor or a cirque.
Terrace:	(i) flat, gently inclined or horizontal surface bordered by an escarpment and composed of alluvium or bedrock; (ii) a relatively flat, elongate, stair-stepped surface bounded by a steep ascending slope on one side and a steep descending slope on the other. Terraces may be erosional or depositional; cut in rock (rock-cut) or unconsolidated soil materials (valleyfill cut); may be paired or unpaired on oppostive sides of a river; and may occur above an existing or former river, lake or ocean bed.
Thrust fault:	a reverse fault that is characterized by a low angle or inclination with reference to a horizontal plane.
Till:	unstratified glacial drift deposited directly by the ice and consisting of clay, sand, gravel and boulders intermingled in any proportion.
Understory:	the vegetation layer below the dominant canopy, usually trees.
Undulating:	a very regular sequence of gentle slopes that extend from rounded, sometimes confined concavities to a broad rounded convexities producing a wave-like pattern of low local relief. Slope length is generally less than 0.5 km and dominant gradient of slopes from 2% to 5%.
Upland:	the higher land of a region, in contrast with the valleys and plains.

Valley train:	an outwash terrace extending down a valley away from the ice front.
Value, color:	the relative lightnes of color, which is approximately a function of the square root of the total amount of light.
Veneer:	unconsolidated materials too thin to mask the minor irregularities of the underlying unit surface. A veneer ranges from 10 cm to 1 metre in thickness.

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